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APPLICATION OF THE
WASH FINANCIAL MANAGEMENT
GUIDELINES TO INDONESIA'S
AUTONOMOUS WATER SUPPLY
ENTERPRISES

WASH FIELD REPORT NO. 289

JANUARY 1990

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WASH Task No. 058

WASH Field Report No. 289

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MANAGEMENT GUIDELINES TO
INDONESIA'S AUTONOMOUS WATER SUPPLY ENTERPRISES**

Prepared for the Office of Health,
Bureau for Science and Technology,
U.S. Agency for International Development
under WASH Task No. 058

by

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and
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ACRONYMS AND ABBREVIATIONS

MOHA	Ministry of Home Affairs
MPW	Ministry of Public Works
GOI	Government of Indonesia
PDAM	Local Water Supply Enterprise
BPAM	Interim Local Water Supply Organization
WEMIS	Water Enterprise Management Information System
PMDU	Provincial Monitoring and Development Unit
WASH	Water and Sanitation for Health Project
USAID	United States Agency for International Development
UFW	Unaccounted for Water
Rps.	Rupiah

EXECUTIVE SUMMARY

BACKGROUND

The Water and Sanitation for Health (WASH) project sponsored by the U.S. Agency for International Development (AID) prepared a set of guidelines for conducting Financial Management Assessments of Water Authorities. The Guidelines were developed as a "rapid assessment" tool to assess the fiscal condition of local water supply agencies. The first field application of the Guidelines has been carried out in Indonesia with the cooperation of the Indonesian Ministry of Home Affairs, the Ministry of Public Works and two local autonomous water supply enterprises (PDAMs) located in Manado and Bitung, both in North Sulawesi Province.

The field application of the guidelines was carried out by a six-person team, as follows:

Mr. Eddy Kurniadi, MOHA
Mr. Bambang Purnanto, Cipta Karya
Mr. Widiyanto Adiputra, Cipta Karya
Mr. John Muhtarno, P.T. Dacrea
Dr. James S. McCullough, WASH
Ms. Jane Walker, WASH

The duration of the field test was six days from December 3 to 8, 1989.

ISSUES

Overall, the PDAMs at Manado and Bitung demonstrated a well-structured organization; GOI guidelines for PDAM operations are well developed as a carry over from the period when the PDAMs were Interim Local Water Supply Organizations (BPAMs) and more directly under the control of Cipta Karya. As the PDAMs operate as autonomous enterprises under the local government structure, a number of operational concerns are arising. Ten major issues emerged from the field application of the Guidelines at the two PDAMs. These are set out below:

Debt Management. Although neither PDAM is yet engaged in debt repayment, their current lack of accounting for depreciation of fixed assets (in violation of GOI accounting guidelines) raises concern about the PDAMs' ability to manage debt which will become a major component of future PDAM costs.

Bill Collection and Tariff Setting. Both PDAMs have problems with late payments. Tariff increases have been made regularly, but are applied mechanically without regard to willingness to pay or effective demand.

Unaccounted for Water. UFW is a growing problem in Manado; average usage per connection is declining making realistic revenue projects difficult. UFW in Biting has stabilized. UFW countermeasures in the past have focused solely on engineering approaches, ignoring management factors.

Cash Management. PDAMs do not demonstrate a progressive profit oriented attitude toward cash management. This is demonstrated by large stocks, substantial arrears, low interest rates received on surplus funds.

Budgeting. Budgeting appears to be a short term exercise, only taking into account one-year increases in cost estimates. This work appears to be reactive and performs no planning function.

Fiscal Relations with Local Government. Current practice with regard to distribution of net profit to local government is flawed because depreciation is not taken into account when net profit is calculated. The sum transferred to the local government appears to be a fixed target figure rather than a calculated figure after costs.

Staff Development. PDAM staff have limited opportunity for transfer or career advancement. Training is limited and the pension system is poorly developed.

Personnel Costs. The current cost accounting system disguises the total costs of personnel to the PDAM by including some costs under general administration and other heads.

Monitoring of PDAM Performance. The current system of performance indicators (WEMIS) is an excellent monitoring system for local water authority performance; however, the system is now used primarily by Cipta Karya, not MOHA.

Management Supervision. Management supervision of PDAMs, provided by the PDAM Board, is insufficient because the Board members are busy with other jobs and are not technically trained in water supply. Further, the Provincial Monitoring and Development Unit (PMDU) has monitoring capacity but limited ability to give appropriate management advice and technical assistance to the PDAMs.

RECOMMENDATIONS

The following recommendations address the most pressing problems identified by the assessment team in the financial management of PDAMs. In general, these focus on strengthening the operational performance of the PDAMs and not on developing new systems or restructuring a basically sound system of local water authorities.

- The capacity for debt management must be strengthened within PDAMs. This will involve:
 - improvements to the accounting systems, especially the treatment of depreciation (immediate need is for dissemination and training in the use of the new accounting guidelines being developed currently by MOHA);
 - improvement in the knowledge and understanding of debt management issues by PDAM leadership, including the local PDAM boards; and
 - improvements in the techniques for, and staff skills in, the forecasting of revenue and expenditures and the links between operating and capital budgeting.
- The procedures for tariff setting should be strengthened within PDAMs, requiring:
 - development of guidelines for tariff setting which incorporate consumer demand considerations; and
 - training of PDAM staff in use of the guidelines.
- The capacity for analyzing willingness to pay and effective demand must be improved within PDAMs, requiring:
 - development of techniques for estimating effective demand that can be used by PDAMs; and
 - training of PDAM staff in use of the techniques.
- The efficiency of PDAM bill collection systems must be improved, involving:
 - development of alternative strategies for collection involving potential use of private sector contractors; and
 - dissemination of information and prototypes of computerized billing and records systems.

- The productivity of PDAM staff should be enhanced by:
 - investigation and development of career paths (within and among PDAMs and BPAMs) that provide opportunity and motivation for staff advancement;
 - expanded opportunity for training in job skills; and
 - development of a sound pension scheme that is properly funded and accounted for.

- To reduce the problem of Unaccounted for Water (UFW), assistance is required in:
 - establishing a program to identify and assist "high risk" PDAMs;
 - developing techniques for analyzing the primary causes of UFW which incorporate management as well as engineering factors.

- To support the ability of GOI to oversee the development and fiscal soundness of PDAMs, assistance is required in:
 - increasing the capacity of MOHA and selected PMDUs to monitor financial performance of PDAMs by acquiring or adapting the Water Enterprise Management Information System (WEMIS) developed by Cipta Karya;
 - developing a capacity to provide expert consulting assistance to PDAMs on an as-needed basis including the following options: (a) expansion of PMDU mandate, (b) use of private consulting firms, and (c) mechanisms for financing this assistance;
 - developing a training delivery plan which makes efficient use of existing resources and facilities, especially the MOHA training center; and
 - review the structure and organization of the PDAM Board, including job descriptions and training, to assure sufficient expertise is provided by the Board for technical, financial, and managerial oversight.

Chapter 1

INTRODUCTION

The Water and Sanitation for Health (WASH) project sponsored by the U.S. Agency for International Development prepared a set of "Guidelines for Conducting Financial Management Assessments of Water Authorities." The Guidelines were developed to assist in assessing the fiscal condition of local water supply agencies and their attendant financial management systems and procedures. The Guidelines are designed as a "rapid appraisal tool" which can be carried out using data that should be readily available within the local water authorities and should require no more than several days of the assessment team's time.

The first field application of the Guidelines has been carried out in Indonesia with the cooperation of the Indonesian Ministry of Home Affairs (MOHA), the Ministry of Public Works (MPW) and two local autonomous water supply enterprises (PDAMs) located in municipalities in North Sulawesi Province--the Manado PDAM and the Bitung PDAM.

Indonesia was chosen as the site for the first field application for several reasons. The GOI is undertaking a significant decentralization of municipal public service delivery with a key element being the creation of local autonomous water supply enterprises (PDAMs). The PDAMs are mandated to deliver potable water supplies on a financially self-sufficient basis, recovering all operating costs and future capital investment (after initial investment by GOI in facilities that establish the PDAM at a "break even point"--i.e., can generate revenues from user charges to operate and maintain the existing systems).

Indonesia was selected as an appropriate site for the initial field application because the PDAMs are now embarking on major borrowing programs to expand their systems, most for the first time. The GOI needs to insure that debt management capability is adequate so that the PDAMs do not undercut the GOI's fiscal decentralization efforts.

The PDAMs also maintain good financial records, backed up by a system of monitoring at both the provincial and national levels. To monitor performance the GOI has instituted the Water Enterprise Management Information System (WEMIS). The system is composed of a set of PDAM performance indicators which are reported monthly to the Provincial Monitoring and Development Unit (PMDU) which analyzes the indicators and, in turn, reports to both the MOHA and Cipta Karya.

Chapter 2

FIELD APPLICATION PROCEDURES

2.1 Objectives of the Field Application

There are three main objectives of the field application in Manado and Bitung PDAMs:

- (a) from the standpoint of AID/WASH, to test the overall utility of the Guidelines in an actual field setting;
- (b) from the standpoint of GOI and USAID/Indonesia, test the usefulness of the Guidelines for future application in Indonesia and identify issues that the GOI central ministries should address in insuring the fiscal soundness of PDAMs; and
- (c) identify any next steps that might be taken by WASH and USAID/Indonesia in assisting GOI's decentralization of water supply services.

2.2 Field Activity

The field application was carried out by a six-person team consisting of:

- two WASH consultants (Dr. James S. McCullough, Team Leader and municipal finance specialist, and Ms. Jane Walker, WASH Staff Economist);
- one representative from MOHA (Mr. Eddy Kurniadi, the section head of the MOHA subdirectorate of Local Government Enterprise who is also a former PDAM director);
- two representatives of the Directorate of Water Supply, Cipta Karya (Mr. Bambang Purnanto and Mr. Widiyanto Adiputra); and
- one local consultant (Mr. John Muhtarno, a water supply engineer with the firm of P.T. Dacrea).

The large size of the team (six persons) was dictated by the desire to have representatives from several GOI ministries as well as local and international consultants on this first field application. Given the availability and high quality of data (both technical and financial) maintained by the PDAMs, such assessments could be conducted by much smaller teams in other PDAMs.

The two PDAMs were extremely cooperative and provided full and open information to the team. The only drawback to the field visits was that both PDAM President/Directors (the chief executive officer of the enterprise) had to be

absent for the majority of the visits, attending a national conference elsewhere. The team met with both PDAM directors before they left, but was not able to review the findings with them; this left a few questions unanswered, but in general it was not a major problem.

The field visit consisted of five major components:

- preparation of the team in Jakarta which consisted of a two-hour briefing with MOHA and Cipta Karya staff plus a three-hour team planning meeting to review the objectives, procedures and roles of the field mission;
- a two-hour briefing with the Manado and Bitung PDAM President/Directors and finance chiefs to cover the mission objectives and acquaint the team with the general operations of the PDAMs;
- data collection and analysis of performance indicators, conducted during a one-day "workshop" in each PDAM;
- follow-up data collection and analysis on procedures (e.g., billing and collection activities) and questions that arose during the review of indicators; and
- review of the monitoring activities of the PMDU.

The field mission lasted six days (including one day total travel time to and from the North Sulawesi region), with most of the time spent in Manado.

Chapter 3

FINDINGS

3.1 Utility of the Guidelines and Data Availability

The Guidelines require detailed financial data which was found to be routinely maintained by the Bitung and Manado PDAMs. Indeed, the GOI employs a system of performance indicators (the Water Enterprise Management Information System --WEMIS--used by the PMDU) which contains almost all of the financial information called for in the WASH Guidelines. The PDAM file detailed monthly reports for the WEMIS which are analyzed by the PMDU in semi annual reports and forwarded to Cipta Karya and MOHA. Furthermore, annual audit reports (completed by the GOI Audit Agency) verify the financial data provided to the PMDU so the information is both up-to-date and certified as accurate.

The Guidelines give considerable attention to debt management which has not yet been faced by either PDAM. However, both enterprises are entering into projects which are loan financed and will need to deal with debt service in the near future--although the long and unusual grace period (no principle or interest charged for five years) will postpone the impact of debt service for a lengthy period.

As noted below under Section 3.3 there is reason for concern over future debt management in both of the PDAMs given (a) their current practice of ignoring depreciation in financial reporting, (b) the variability in cost and revenue trends over the past few years and (c) the impact of recent tariff increases on water sales which makes forecasting effective demand difficult.

3.2 Results of the Field Applications

During the field visit the consultants prepared time series data tables for both PDAM Manado and PDAM Bitung. Data were collected for 1986 through September 1989. Estimates were prepared for the last three months for 1989 based on the previous nine months to give a full four year trend analysis. Tabulated results for production, revenue and cost information as well as information on staffing and connections, are set out in Appendix Tables 1.1 and 1.2 for Manado and Bitung respectively. Results of this analysis are described in the following sections.

3.2.1 Manado PDAM

Manado is the capital city of North Sulawesi Province. It is a busy market town served by a port on the Celebes Sea and the regional airport. The latter is about 10 km. from the town. There is no single dominant industry in Manado and the town serves as the commercial center for the surrounding agricultural hinterland. Agricultural production includes cloves, coffee, coconuts, rice and fruit.

The current population of the city of Manado is estimated at 250,000. A growth rate of 2.2% per annum is expected. The city of Manado, through the PDAM, took over the operation and management of its water supply system in early 1986. Current water coverage is about 47%. The number of connections at the end of 1989 is estimated at 21,800 with an average service level of 5.4 persons per connection. Total consumption per connection per month is estimated at 30m³. This is approaching 190 liters per person per day which is considerably higher than the national planning average of 125 liters per person per day.

Water is supplied from a combination of spring and river sources. Total production of treated water in 1989 is estimated at 13.95 million m³. Manado has an increasing problem with Unaccounted for Water (UFW). System losses have increased from 28% in 1986 to over 44% in 1989. Currently a domestically financed capital works program is underway. This emergency works program is aimed at reducing UFW in part by increasing distribution capacity. New connections are being established at a rate of 280 per month.

All connections are metered. The vast majority of domestic connections are individual household connections. There are only 50 standpipes in Manado serving between 50 to 200 people each. Water payment for standpipes are made through locally organized consumer water groups.

Meters are read monthly by a staff of 15 meter readers. The majority of meters are in good working order with a replacement schedule for old and broken meters of about 50 meters per month. The billing systems is computerized and payment is made monthly into two local nominated banks. There is a 10% monthly penalty accumulated for late payments; after three months water can be cut off. Approximately 1000 consumers have been disconnected in 1989. The reconnection rate is about 50% which includes payment of all arrears and the reconnection fee of Rps 200,000. Overall collection efficiency is high with an average annual rate over the last four years (including collection of arrears) of over 85%. This has dropped somewhat in 1989 possibly reflecting the most recent tariff increase (see below). Month-to-month collection efficiency is, however, lower at around 52% reflecting a reluctance on consumers to pay within the allocated time.

The average tariff for Manado in 1989 is estimated at Rps 278/m³ (water sales/volume billed.) The tariff is revised approximately every two years. The latest tariff increase was in January 1989 when rates went up about 75%. Tariff rates are divided into five consumer categories. Domestic billing makes up about 53% of revenues followed by commercial enterprises with 42%. Industrial consumption is small at less than 2%, reflecting the service economy of Manado and its lack of an industrial base. The category of social consumers (i.e., schools, hospitals, etc.) and a special category for the airport and port make up less than 3% of the average annual revenue. Increases in future revenues will depend on expanding the commercial and domestic revenue base.

The recent capital improvement program in Manado is reflected in the increase in non-operational costs. During 1986 and 1987 non-operational costs were running at about 20% of total costs; in 1989 non-operational costs are estimated at almost 40%. Within non-operational costs the largest proportion of expenditure is for capital works at about 36% and payment to third parties, 30%. As the

proportion of non-operational costs has risen, operational costs have fallen to about 60% of total costs from 80% in 1986 and 1987. As a direct result of the increase in connections due to the capital works program, operational costs per connection have fallen by 13%. Maintenance costs for new connections are expected to be minimal in the initial years of operation. Within operational costs salaries and general administrative expenses take the majority of operating funds at about 46% of expenditures. Maintenance costs including spares and stocks make up about 33% of costs, and electricity accounts for 21% of operating costs due to the pumping costs associated with the river source.

COST SCHEDULE: Manado PDAM (January-September 1989)			
		<u>Percentage</u>	
	Rps. Millions	Sub-Total	Total
<u>Operational Costs</u>			
Salaries	348.8	31	19
Admin & General Expenses	167.0	15	9
Maintenance (Spare Parts)	71.0	6	4
Stocks	305.7	27	16
Electricity	233.3	21	13
Sub-Total	1126.2	100	60
<u>Non-Operational Costs</u>			
Buildings Infrastructure	263.5	36	14
Supporting Fund	64.3	9	3
Net Profit sent to PEMDA	85.0	11	5
Repayment of third parties	218.2	30	12
Tax	13.0	2	--
Co-Financed Fund	92.0	12	5
Sub-Total	736.1	100	40
TOTAL	1862.3		100

3.2.2 Bitung PDAM

Bitung is a town of approximately 97,000 people situated 40 km east of Manado on the Celebes Sea coast. The town's deep water harbor and modern port facilities are a major source of employment and income for the town. Average population projections for urban areas indicate population growth at about 2.2% per annum.

Currently about 39,000 people or 40% of the population is served by the PDAM Bitung. The PDAM at Bitung only recently took over control of water services in 1988 from the BPAM. It has operated as a PDAM for about 12 months. Current water

production is about 2.25 m³ per annum. The main water source is capped springs. During recent dry years production and delivery levels have dropped due to the fall in groundwater. Seasonal pumping schedules are limited to a reduced delivery of only four hours a day in some locations. UFW in Bitung has averaged about 30% of total production over the last four years.

There are approximately 6300 connections in Bitung. All connections are metered. The majority of domestic connections are individual household connections; there are only 39 standposts. Average consumption per person is estimated at 140 liters per person per day. Bitung PDAM is undertaking a capital expansion program to increase house connections by 2000 in 1992. This represents a 30% increase in connections. Collection efficiency in Bitung is very high at over 90%. Meters are read monthly and bills are paid at a nominated commercial bank. The billing systems is manual but appears highly effective. Overall about 250 connections are cut off in a year for delinquent payments.

PDAM Bitung has an advantage in its position for water provisioning for shipping at the harbor. The average tariff for Bitung is Rps 210/m³, however, the harbor authority is charged at five times the average rate. The harbor authorities then resell the water to ships at an additional profit. Overall it is estimated that PDAM Bitung receives about 30% of its total revenue from water sales to the harbor.

Operational costs as a proportion of total costs in Bitung are on the rise. Operational costs represent 80% of total costs in both 1988 and 1989. Overall growth rate in operating costs per connection have increased, but at a decreasing rate due to the increased number of connections. This trend reflects a capital works expansion program in 1986 and 1987 when non-operation budget allocations took almost 50% of total costs.

COST SCHEDULE: Bitung PDAM (January -December 1988)			
	Rps. Millions	<u>Percentage</u>	
		Sub-Total	Total
<u>Operational Costs</u>			
Salaries	106.5	59	40
Admin & General Expenses	44.6	25	18
Maintenance (Spare Parts)	10.8	6	4
Stocks	11.9	6	4
Electricity	7.7	4	2
Sub-Total	181.6	100	68
<u>Non-Operational Costs</u>	84.6	100	32
TOTAL COSTS	266.2	100	100

3.3 Major Issues from Results of the Field Applications

Ten major issues have emerged from the field application of the Guidelines in Manado and Bitung. These have implications for both the management of the two PDAMs and for the overall GOI policies concerning local water enterprises in Indonesia.

3.3.1 Debt Management

Manado and Bitung PDAMs do not make provision for depreciation of fixed assets (physical facilities) in their current financial accounting. The practical consequences of this, so far, have been minor but it has created the sense that the two enterprises are "profitable" when they are not yet covering their capital costs from revenues. This, in turn, has led the PDAMs to distribute "profits" to local government and to the bonus pool for PDAM employees which violates the GOI guidelines. Although the PDAMs do not account for depreciation in their annual costs, they do maintain assets registers and valuation of fixed assets. Using the GOI mandated straight line depreciation over 20 years, the depreciation charge for Manado PDAM in 1988 would have amounted to about 248 million Rupiah, equal to about 13% of total costs for the PDAM in that year.

Both PDAMs show a declining amount of total revenue per connection from 1988 to 1989. This is troubling news especially for Manado since it comes after a rise in tariffs of about 75%. This means that the tariff increase has been largely offset by a decline in usage. This suggests that it may be difficult to increase willingness to pay to a level that will cover capital investment--a prerequisite for debt repayment.

On the positive side, Manado has been holding its operating costs steady (and in terms of operating cost per connection has lowered the cost substantially in the last year). This means that cost efficiencies on the operating side have created an operating surplus which has been devoted to capital expenditures (equipment, leak detection, repair and water lines extension). This operating surplus has grown from 21% of total costs in 1986 to 39% in 1989 and provides some cushion for debt service in the future.

3.3.2 Bill Collection and Tariff Setting

Manado and Bitung PDAMs have problems with late payments of bills. Manado collects about 52% of bills within 30 days while Bitung collects about 70%. Both PDAMs have been fairly effective at collecting past arrears so that the total revenue collected for water sales in a fiscal year has been close to the total billed for water sales in that year--Bitung routinely collects an amount equal to over 95% of the billings in a year; Manado has been collecting between 87% and 95% although that has dropped to about 77% in 1989 with the tariff increase. To improve collection rates, Manado has tightened up its disconnection policy in the last year. The issue of arrears does not appear to be taken too seriously as there is a sense that most consumers will pay sooner or later. The lost revenue from this large block of floating late payments is not recognized by PDAM management. Tariff increases have been fairly regular in Manado, comprised of

consistent percentage rises in all customer classes. The drop in average consumption and decline in collection efficiency in Manado in 1989 suggests that large across-the-board tariff increases in the future may not be acceptable and that demand for water is sensitive to price. A better understanding of demand and price sensitivity is required.

3.3.3 Unaccounted for Water (UFW)

UFW in Manado is a growing problem while in Bitung, it is moderate and fairly stable. The assessment team was not able to investigate the technical engineering aspects of UFW in Manado, but it appears that Manado PDAM has been increasing pumping capacity and levels of production over the past three years, while metered sales have been slightly declining in total volume. Manado has a program to vigorously add new connections to make use of this excess production capacity--at current rates of new connections through September 1989, this effort will result in an increase in connections of almost 20% this year alone. While this increase in the customer base should increase total consumption, the decline in average usage per connection is offsetting the increased demand.

The large proportion of UFW in Manado has two impacts:

- (1) it wastes PDAM resources because it is expensive treated water that is being lost; and
- (2) it makes future financial projections difficult since revenue forecasts are dependent on sales projections.

Cipta Karya has had a program to deal with UFW in 30 PDAMs, involving only engineering improvements (e.g., leak detection). While this is an important aspect of reducing UFW, there are management countermeasures that must also be considered. Indeed, there is a need for UFW assessment techniques that enable the PDAMs to identify the principal causes of UFW in individual cases and develop targeted improvement programs, before undertaking expensive engineering studies.

3.3.4 Cash Management

Although the PDAMs are treated as profit-making enterprises, their management of cash reflects a basic lack of appreciation of the "time value of money." This is most apparent in (a) the attitude toward collection of arrears, (b) the holding of very large stocks of supplies and spare parts, and (c) the inability to invest surplus funds in short term interest bearing instruments to generate additional revenue. This last problem is a structural problem in that the PDAMs are not permitted to invest funds in instruments that pay reasonable interest rates. The PDAMs will be forced to confront this issue when they begin to manage debt service and must make their cash management more productive.

3.3.5 Budgeting

The budgeting process is undertaken on an annual basis. It appears a "mechanical" process in that costs are increased 10% per year as a norm. It appears there is no reference to national or domestic cost indices that would give more specific guidance. A unit cost per connection is calculated and the capital budget estimates for construction are based on this unit cost times the projected number of connections. Recently Central Government directed that staff salaries should increase by 15%; budget allocations were only 10%. Any changes within the adopted budget for the PDAM must be authorized through the supervisory board. PDAM Manado indicated that they had never exceeded the total budget allocation, but that often changes within budget categories would need to be accommodated due to overruns in particular sectors such as maintenance expenses. PDAM Manado employed two people in the budgeting section. Their main duty is to prepare the cost estimates from the various section/division equipment requirements, etc. Their work appears to be reactive; they perform no planning function.

3.3.6 Fiscal Relations with Local Government

The PDAM, while technically "autonomous", is under the control and ownership of the local government; in the case of Manado PDAM it is under the Manado municipality while Bitung PDAM is under the Bitung municipality. The municipality mayor is the head of the PDAM Board and has a major voice in tariff setting, capital investment plans and distribution of the "profits" of the PDAM. The distribution of "profits" is a sensitive subject. According to GOI guidelines, the municipal government is entitled to receive 55% of the "net profits" of the PDAM (the calculation of net profits includes a charge for depreciation of fixed assets as well as other capital and operating costs). Since neither PDAM accounts for depreciation, it is impossible to determine what true "net profits" are for Manado and Bitung PDAMs.

Furthermore, the amount set aside each year as payment to the municipality is fixed at the beginning of the year as a target (for municipal budgeting purposes) rather than being calculated at the end of the year on the basis of actual experience. This is a dangerous practice as it creates a relationship where the PDAM becomes a cash generator for the municipality while ignoring the need to build up funds for replacing the capital assets of the PDAMs. Furthermore, this practice removes some of the pressure from the municipal government to generate local revenues from other tax and fee sources. This means that when the PDAM is forced to cut these payments in the future (in order to make debt payments) the municipal government will lose a revenue source. Indeed, the municipality may be asked to reverse the revenue flow and "bail out" the PDAM if the PDAM encounters problems with debt service in the future.

3.3.7 Personnel Costs

The cost accounting system disguises the total costs of personnel to the PDAM by categorizing the different components of personnel costs under different line items which are not well labelled. While salary costs are included under the

"salary" line item, additional personnel allowances are included under several different sub headings under "general administration." Bonus payments to staff are included in the distribution of net profits (10% of "net profits" goes into the bonus pool). Another 10% of the net profits is also supposed to be set aside for a pension pool, but this has not been done yet in either PDAM. If we estimate total personnel costs from all these sources in 1988, we see that they account for about 50% of operating costs in Manado and about 84% of operating costs in Bitung.

On the positive side, both Manado and Bitung PDAMs have been fairly good about controlling staff growth over the past few years, although they are both below the connection-to-staff target ratio of 100 set by Cipta Karya as a guide. To some extent, a PDAM can get around this target by hiring private contractors to perform some of the staff functions such as maintenance.

3.3.8 Monitoring of PDAM Performance

Indonesia has probably the best information system for monitoring local water authority performance of any developing country. The WEMIS contains all the performance indicators needed; the quality and timeliness of the data are good; and the existence of the PMDU at the provincial level backed up by both Cipta Karya and MOHA, is a sound review structure. Although the North Sulawesi PMDU is not fully staffed yet, it would appear to have more than enough staff positions to conduct monitoring for its four PDAMs and three BPAMs. One question about the current system is the ability to provide technical assistance and training outreach to the PDAMs which go beyond monitoring of the WEMIS indicators. It is not clear that the PMDU staff have expertise in PDAM management such that they will be able to provide direct assistance to the PDAMs. Furthermore, it is clear that the MOHA Directorate of Local Government Enterprise, which is charged with overseeing PDAMs, is not yet adequately staffed for that task, especially as a large number of BPAMs are slated to be converted to PDAMs in the near future. Even though most water authorities appear to have received good guidance and staff training while being set up as BPAMs, there is a limited support structure (training and technical assistance) beyond the PMDU monitoring. At the central government level, MOHA does not yet have its own version of the WEMIS. Because the system is already developed and used in Cipta Karya, it could be replicated in MOHA quickly and inexpensively.

3.3.9 Management Supervision

Management oversight of the PDAM is provided by the PDAM Board which is headed by the mayor and composed of other local government officials. The composition of the PDAM Board is designed to insure local community control over PDAM operations. However, Board members are very busy with other jobs, have little time for PDAM matters and are not trained in their roles. The PMDU provides monitoring, but no supervision, of the PDAMs in the region. While the PMDU is technically under the Provincial Governor, in fact, the PMDU is staffed largely by central ministry personnel. There is a proposal to expand the PMDU mandate beyond monitoring to include provision of technical assistance and training to the PDAMs. This would require new staff skills and could be viewed as an

extension of more central government control over the "autonomous" PDAMs. The North Sulawesi PMDU is just becoming operational; while PMDUs in some other regions have already been established, there are a number of regions which lack functioning PMDUs.

3.3.10 Staff Development

PDAM staff have very limited opportunity for transfer to other PDAMs or BPAMs and very little room for career advancement. Training of PDAM staff in Manado and Bitung has been limited to upper management levels. The staff appear to be adequately skilled for their current jobs owing primarily to the job guidelines implemented when the organization were created as BPAMs. However, now there is no regular refresher training or skill upgrading in either PDAM. The pension system for PDAM employees is not well developed. Each employee contributes a small amount toward the pension fund and 10% of the "net profits" is supposed to be contributed to the fund. This has not been done. While such a scheme does provide a performance incentive for employees, it raises problems about equity and proper cost accounting (i.e., the pension cost is not treated as a current operating personnel cost).

Chapter 4

RECOMMENDATIONS

The following recommendations address the most pressing problems identified by the assessment team in the financial management of PDAMs. In general, the recommendations are focused on strengthening operational support to PDAMs and not on developing new systems or restructuring the current system.

- The capacity for debt management must be strengthened within PDAMs. This will involve:
 - improvements to the accounting systems, especially the treatment of depreciation (immediate need is for dissemination and training in the use of the new accounting guidelines being developed currently by MOHA);
 - improvement in the knowledge and understanding of debt management issues by PDAM leadership, including the local PDAM Boards; and
 - improvements in the techniques for, and staff skills in, the forecasting of revenue and expenditures and the links between operating and capital budgeting.
- The procedures for tariff setting should be strengthened within PDAMs, requiring:
 - development of guidelines for tariff setting which incorporate consumer demand factors; and
 - training of PDAM staff in use of the guidelines.
- The capacity for analyzing willingness to pay and the effective demand must be improved within PDAMs, requiring:
 - development of techniques for estimating effective demand that can be used by PDAMs; and
 - training of PDAM staff in use of the techniques.
- The efficiency of PDAM bill collection systems must be improved, involving:
 - development of alternative strategies for collection, including potential use of private sector contractors; and
 - dissemination of information and prototypes of computerized billing and records systems.

- The productivity of PDAM staff should be enhanced by:
 - investigation and development of career paths (within and among PDAMs and BPAMs) that provide opportunity and motivation for staff advancement;
 - expanded opportunity for training in job skills; and
 - development of a sound pension scheme that is properly funded and accounted for.

- Strategies for reducing UFW should be developed which incorporate management as well as engineering approaches. This would include:
 - development of a monitoring program to identify "high risk" PDAMs;
 - development and implementation of assessment techniques to analyze causal factors in UFW.

- To support the ability of GOI to oversee the development and fiscal soundness of PDAMs, assistance is required in:
 - increasing the capacity of MOHA and selected PMDUs to monitor financial performance of PDAMs by acquiring or adapting the Water Enterprise Management Information System (WEMIS) developed by Cipta Karya;
 - developing a capacity to provide access to expert consulting assistance to PDAMs on an as needed basis (including study of options covering (a) expansion of PMDU mandate and (b) use of private consulting firms);
 - developing a training delivery program for PDAMs which makes efficient use of existing resources and facilities, especially the MOHA training center; and
 - reviewing the structure and mandate of the PDAM Boards to assure adequate management at the local level (including job descriptions, training, compensation, etc.)

APPENDIX A

Tables

MANADO PDAM - LOCAL WATER SUPPLY ENTERPRISE
Production, Revenue and Cost Analysis
1986 to 1989 (Current Prices)

	UNIT	1986	1987	1988	1989
PRODUCTION					
Total Production	m3 million	11.73	12.84	13.94	13.95
Billed Production	m3 million	8.45	8.81	8.53	7.80
Unaccounted for Water (UFW)	m3 million	3.28	4.03	5.41	6.15
UFW as % of Total	%	28.0%	31.4%	38.8%	44.1%
REVENUE					
Billed Production	Rps million	1583	1741	1777	2810
Water Sales	Rps million	1392	1498	1679	2165
Collection Efficiency	%	87.9%	86.0%	94.5%	77.0%
Other Operational Revenue	Rps million				271
Non-Operational Revenue	Rps million				91
Total Revenue	Rps million	1599	1709	2069	2527
Annual Growth in Water Sales	%		8%	12%	29%
Annual Growth in Total Revenue	%		7%	21%	22%
COSTS					
Operational	Rps million	1280	1275	1378	1501
Non-Operational	Rps million	342	347	772	981
Total Costs	Rps million	1622	1622	2150	2482
NET SURPLUS	Rps million	-23	87	-81	45
STAFF					
CONNECTIONS	Number	201	195	185	250
RATIO CONNECTIONS TO STAFF		81	87	95	87
TOTAL REVENUE PER CONNECTION	Rps thousand	98.5	101.2	118.2	115.8
WATER SALES PER CONNECTION	Rps thousand	85.8	88.7	96.0	99.2
OP COSTS PER CONNECTION	Rps thousand	78.9	75.5	78.8	68.8
INCREASE IN CONNECTIONS			660	606	4326
GROWTH RATE IN CONNECTIONS			4%	4%	25%
GROWTH RATE IN WATER SALES			3%	8%	3%
GROWTH RATE IN OP COSTS			-4%	4%	-13%
WATER SALES PER m3 (Total Prod.)	Rps/m3	119	117	120	155
WATER SALES PER m3 (Billed Prod.)	Rps/m3	165	170	197	278

Note: 1989 cost and revenue data estimated from January - September 1989.

BITUNG PDAM - LOCAL WATER SUPPLY ENTERPRISE

**Production, Revenue and Cost Analysis
1986 to 1989 (Current Prices)**

	UNIT	1986	1987	1988	1989
PRODUCTION					
Total Production	m3 million	2.36	2.26	2.07	2.25
Billed Production	m3 million	1.61	1.62	1.39	1.60
Unaccounted for Water (UFW)	m3 million	0.75	0.64	0.68	0.65
UFW as % of Total	%	31.8%	28.3%	32.9%	28.9%
REVENUE					
Billed Production	Rps million	310.6	345.4	301.5	368.5
Water Sales	Rps million	302.6	344.7	293.8	336.4
Collection Efficiency	%	97.4%	99.8%	97.4%	91.3%
Other Operational Revenue	Rps million				
Non-Operational Revenue	Rps million				
Total Revenue	Rps million	374.9	363.2	416.1	436.5
Annual Growth in Water Sales	%		14%	-15%	14%
Annual Growth in Total Revenue	%		-3%	15%	5%
COSTS					
Operational	Rps million	187.1	255.4	301.7	310.5
Non-Operational	Rps million	127.9	237.5	84.7	82
Total Costs	Rps million	315	492.9	386.4	392.5
NET SURPLUS	Rps million	59.9	-129.7	29.7	44
STAFF					
CONNECTIONS	Number	5388	5482	5770	6300
RATIO CONNECTIONS TO STAFF		76	77	80	93
TOTAL REVENUE PER CONNECTION	Rps thousand	69.6	66.3	72.1	69.3
WATER SALES PER CONNECTION	Rps thousand	56.2	62.9	50.9	53.4
OP COSTS PER CONNECTION	Rps thousand	34.7	46.6	52.3	49.3
INCREASE IN CONNECTIONS			94	288	530
GROWTH RATE IN CONNECTIONS			2%	5%	9%
GROWTH RATE IN WATER SALES PER CONNECTION			12%	-19%	5%
GROWTH RATE IN OP COSTS PER CONNECTION			34%	12%	-6%
WATER SALES PER m3 (Total Prod.)	Rps/m3	128	153	142	150
WATER SALES PER m3 (Billed Prod.)	Rps/m3	188	213	211	210

Note: 1989 cost and revenue data estimated from January - September 1989.

APPENDIX B

List of Contacts

APPENDIX B

List of Contacts

MINISTRY OF HOME AFFAIRS

POSITION

- | | | |
|----|-----------------------|---|
| 1. | MR. SYARIF DJOHAN | Director of Development for Local Enterprises |
| 2. | MR. S. PANJAITAN | Subdirector |
| 3. | MR. SIHOL H. TAMBUNAN | Chief of Sector |
| 4. | MR. EDDY KURNIADI | Chief of Sector |
| 5. | MR. TIMBUL PUDJIANTO | Chief of Sector |

MINISTRY OF PUBLIC WORKS/DG. CIPTA KARYA

- | | | |
|----|-----------------------|---|
| 1. | MR. A.R. TAMBING | Director of Water Supply |
| 2. | MR. TRI HARSONO | Subdirector of Technical Development |
| 3. | MR. WIDIANTO ADIPUTRA | Subdirector (Chief of Section Implementation) |
| 4. | MR. BAMBANG PURWANTO | Subdirector (Staff of Management Development Section) |

NORTH SULAWESI WATER SUPPLY PROJECT/PMDU

- | | | |
|----|----------------------|-------------------------------|
| 1. | MR. BAMBANG KOESOEMO | Project Officer/Chief of PMDU |
| 2. | MRS. MEITY HERIANI | Staff PPSAB/PMDU |

NORTH SULAWESI PROVINCE - DEPARTMENT OF PUBLIC WORKS

- | | | |
|----|-------------------|---------------------------------|
| 1. | MR. NOLDY MAKALEW | Chief of Sub Dinas, CIPTA KARYA |
|----|-------------------|---------------------------------|

PDAM MANADO

- | | | |
|-----|------------------------|--|
| 1. | MR. SIDARTA SAELAN | - President Director |
| 2. | MR. L. TINANGON | - Director of General Affairs |
| 3. | MR. SOETONO | - Enterprise Inspector |
| 4. | MR. M. KELEJAN | - Chief of Production |
| 5. | MR. M. JACOB | - Chief Distribution |
| 6. | MR. FERRY SIWI | - Ass't Tech. Project Officer of PDAM Manado Project |
| 7. | MR. CH. MAILANGKAY | - Chief of Planning |
| 8. | MR. CH. MANAHANI | - Chief of Maintenance |
| 9. | MR. THEO NANGGOY | - Chief of Financial |
| 10. | MR. E. KANDOU | - Chief of Consumers Services |
| 11. | MR. A. LATIF LANGANAWA | - General Affair Staff |
| 12. | MR. EKMOND MUNDIANI | - Book Keeper |
| 13. | MRS. TRENAWATY | - Personnel |
| 14. | MR. T. KALIGIS | - Chief of Security |

PDAM EITUNG

1. MR. P. NABABAN - Director of General Affairs and Finance
2. MR. ENOCH DJUMHANA - Technical Director
3. MR. J. SANGGIGILAN - Planning
4. MR. J.F. MONGAN - Production
5. MR. E.A. LALISANG - Consumers Services
6. MRS. A. TANGKILISAN - Consumers Services
7. MS. J. TICOALU - Bill Collection
8. MRS. MAXI A.T. MANDAGI - Financial Administration
9. MR. J. PANGALO - Book Keeping
10. MR. WAYONGKERE - Book Keeping
11. MR. M. SLAMET - Distribution

P.T. DACREA

1. MR. JOHN H. TJAHHADI - Director
2. MR. GARDJITO - Assistant Director
3. MR. J. MUHTARNO - Project Engineer

WASH TEAM

1. DR. JAMES McCULLOUGH - Team Leader, WASH/USAID-RTI
2. MRS. JANE WALKER - Assistant Director of Finance, WASH/USAID
3. MR. EDDY KURNIADI - Team Member
4. MR. WIDIANTO ADIPUTRA - Team Member
5. MR. BAMBANG PURWANTO - Team Member
6. MR. J. MUHTARNO - Team Member

APPENDIX C

Executive Summary (Bahasa)

**APLIKASI ATAS
PANDUAN FINANCIAL MANAGEMENT WASH
PADA PDAM DI INDONESIA**

Ringkasan Executive

Latar Belakang

The Water and Sanitation for Health (WASH) Project disponsori oleh US Agency for International Development (USAID) menyiapkan satu set panduan untuk melaksanakan Financial Management Assessment atas pengelola air minum (PDAM). Panduan tersebut dikembangkan sebagai alat penentu yang cepat mengenai keadaan keuangan PDAM.

Sebagai percobaan pertama penggunaan panduan tersebut telah dilaksanakan di Indonesia berkat kerjasama dengan pihak-pihak Departemen Dalam Negeri, Departemen Pekerjaan Umum beserta dua PDAM di Propinsi Sulawesi Utara yaitu PDAM Manado dan PDAM Bitung.

Pelaksanaan uji coba atas panduan tersebut telah dilaksanakan oleh Team yang terdiri dari 6 (enam) orang sebagai berikut :

- | | |
|--------------------------|-----------------------|
| - Ir. Eddy Kurniadi | - Depdagri |
| - Ir. Widiyanto Adiputra | - DAB, DG Cipta Karya |
| - Bambang Purwanto M.Sc | - DAB, DG Cipta Karya |
| - Ir. John Muhtarno | - PT. Dacrea |
| - Dr. James Mc Cullough | - WASH |
| - Ms. Jane Walker | - WASH |

Uji coba lapangan telah dilakukan selama 6 hari sejak 3 - 8 December 1989.

ISSUES

Secara keseluruhan PDAM Manado dan Bitung telah menunjukkan kondisi organisatoris yang baik. Petunjuk operasional PDAM telah dikembangkan sebagai pelengkap serah terima dari BPAM ke PDAM. Setelah beroperasi secara "aitonomy" sebagai perusahaan daerah, beberapa masalah operasional timbul kemudian. Beberapa Issues/ Masalah yang ditemukan dalam aplikasi lapangan berdasar panduan tersebut terhadap kedua PDAM, adalah sebagai berikut :

KEKURANGAN DALAM MANAGEMENT - Walaupun kedua PDAM belum dibebani pengembalian pinjaman, kepada pembukuan keuangan saat ini belum memperhitungkan nilai penyusutan atas asset-asset yang tetap (bertentangan dengan petunjuk pembukuan), perlu diperhatikan atas kemampuan PDAM dalam mengelola kekurangan tersebut, yang akan menjadi componen utama pada beban-beban PDAM pada masa mendatang.

PENAGIHAN PEMBAYARAN DAN PENYIAPAN TARIF - Kedua PDAM mengalami masalah keterlambatan dalam pembayaran pemakaian air. Kenaikan tarif yang dilaksanakan secara teratur, diterapkan secara langsung, tanpa memperhitungkan akan keinginan untuk membayar ataupun pengaruhnya terhadap kebutuhan pemakaian.

KEHILANGAN AIR - Masalah kehilangan air berkembang di Manado, pemakaian air rata-rata menunjukkan penurunan membuat proyeksi penerimaan yang realistic menjadi sukar.

Kehilangan air di Bitung stabil.

Usaha-usaha penanggulangan kehilangan air pada masa lalu dititik beratkan pada pendekatan teknis, belum memperhitungkan faktor management.

CASH MANAGEMENT - PDAM tidak menunjukkan "progressive profit oriented" dalam hal management tunai. Hal ini dapat ditunjukkan dari banyaknya stock, besarnya piutang, rendahnya nilai bunga pembayaran pada dana surplus.

ANGGARAN - Masa anggaran yang pendek, hanya 1 tahun untuk periode mendatang. Hal ini menunjukkan kekurangan sempurnaan dalam perencanaan.

HUBUNGAN PEMBAYARAN KEPADA PIHAK PEMDA - Praktek yang ada saat ini dalam kaitan dengan pembagian net profit terhadap Pemda dilakukan tanpa memperhitungkan nilai penyusutan dalam perhitungan net profit. Jumlah yang ditransfer pada Pemda nampaknya merupakan target yang tertentu dan bukan merupakan hasil perhitungan keuangan.

PENGEMBANGAN PERSONEL - Para Staff PDAM mempunyai keterbatasan dalam pengembangan karier, disamping masalah pensiun yang belum mendapat perhatian yang cukup.

BIAYA PERSONEL - Perhitungan dalam system pembukuannya dimasukkan di dalam biaya-biaya umum atau biaya lain-lain.

MONITORING TERHADAP "PERFORMANCE" PDAM - System WEMIS yang ada saat ini cukup baik sebagai monitoring system terhadap "performance" PDAM. System tersebut dipersiapkan oleh DG. Cipta Karya.

BADAN PENGAWASAN - Badan Pengawas yang bertanggung jawab atas kelangsungan operasional PDAM perlu mendapat training dan pengarahan dibidang air minum disamping tidak terlalu disibukkan oleh kegiatan lain agar dapat melakukan pengawasan yang memadai. Sebaliknya PMDU memiliki kemampuan monitoring tetapi masih perlu ditunjang oleh staff yang terlatih dalam memberikan bantuan teknis pada PDAM-PDAM.

Rekomendasi

Rekomendasi berikut ini ditujukan untuk mengatasi problem yang ditemukan oleh Team Uji Coba dalam masalah financial atas kedua PDAM dan secara umum difokuskan untuk memperkuat performance system dasar yang dianut oleh PDAM-PDAM saat ini. Hal tersebut adalah sebagai berikut :

* Kapasitas atas kekurangan management dalam PDAM harus ditingkatkan dengan antara lain

- Peningkatan sistim pembukuan, khususnya dalam penanganan masalah penyusutan (kebutuhan mendesak adalah penyebaran dan training atas penggunaan bimbingan/pembukuan yang pada saat ini sedang dikembangkan oleh Departemen Dalam Negeri.
- Peningkatan pengetahuan dan pengertian atas kekurangan dalam management PDAM termasuk terhadap Dewan Pengawas, dan

- Peningkatan bidang teknik dan ketrampilan karyawan dalam memproyeksi pendapatan dan pengeluaran serta hubungan antara operasi dan anggaran dana.
- * Prosedur untuk menyusun tarif harus ditingkatkan di dalam PDAM, hal tersebut memerlukan :
 - Pengembangan atas petunjuk untuk perhitungan tarif, dengan memperhitungkan kebutuhan langganan.
 - Training terhadap pegawai PDAM dalam penggunaan petunjuk tersebut.
- * Kapasitas untuk menganalisa kemauan untuk membayar dan kebutuhan yang efektif harus diperbaiki di dalam PDAM, dimana memerlukan :
 - Peningkatan teknis atas estimasi kebutuhan efektif yang dapat digunakan oleh PDAM, dan
 - Training terhadap pegawai PDAM dalam penggunaan teknis tersebut.
- * Untuk meningkatkan efisiensi dalam pengumpulan tagihan air PDAM, maka sistim harus dikembangkan, termasuk :
 - Pengembangan dari strategi lain untuk pengumpulan tagihan, termasuk keikutsertaan sektor Kontraktor swasta, dan
 - Penyebaran informasi dan tagihan yang diolah oleh computer serta sistim laporan.
- * Produktivitas pegawai PDAM harus ditingkatkan dengan :
 - Penelitian dan peningkatan dari karirnya (di dalam PDAM dan BPAM) yang menyediakan kesempatan dan motivasi untuk peningkatan pegawai.
 - Meningkatkan kesempatan untuk training dalam pekerjaannya.
 - Peningkatan sistim pensiun yang baik dan terperhitungkan.
- * Untuk membantu kemampuan pemerintah dalam mengamati pengembangan dan kemampuan keuangan PDAM, bantuan yang dibutuhkan meliputi :
 - Peningkatan kemampuan Depdagri dan PMDU dalam memonitor keadaan keuangan PDAM dengan memanfaatkan WEMIS (Water Enterprise Management System) yang dikembangkan oleh Ditjen Cipta Karya.
 - Penggunaan tenaga ahli dalam membantu PDAM sesuai kebutuhan, antara lain :
 - a. peningkatan peranan PMDU,
 - b. penggunaan jasa konsultan,
 - c. mekanisme guna membiayai bantuan tersebut, dan
 - Peningkatan program training guna meningkatkan efisiensi sumber daya maupun fasilitas yang dimiliki saat ini.