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PRIVATE SECTOR PARTICIPATION
IN URBAN WATER SUPPLIES
ISSUES FOR INVESTMENT IN INDONESIA

VOLUME I—A STRATEGIC FRAMEWORK

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PRIVATE SECTOR PARTICIPATION IN URBAN WATER SUPPLIES

ISSUES FOR INVESTMENT IN INDONESIA

Volume I

**A STRATEGIC FRAMEWORK FOR INCREASING
PRIVATE SECTOR PARTICIPATION IN URBAN
WATER SUPPLY IN INDONESIA**

**SUMMARY OF PRINCIPAL FINDINGS,
IMPLICATIONS, NEXT STEPS**

Prepared for the USAID Mission to Indonesia
under WASH Task No. 186

May 1991

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OTHER MATERIALS IN THIS STUDY (bound separately)

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- B. Policy and PSP Project Development
- C. Identification of Private Financed Projects—Stage 1
- D. Project Preparation and Promotion—Stage 2
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- I. Prepare Joint Venture Agreements—Stage 7
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- A. Relevant Law and Regulation Related to PSPUWS
- B. Draft Model of JVC Agreement
- C. Proposed Structure of the Project Preparation Report

VOLUME III

- Working Paper A: Private Sector Participation in Selected Urban Services
- Working Paper B: A Review of Indonesian Laws and Regulations Concerning
Private Sector Participation in Urban Water Services
- Working Paper C: Public Policy and PSPUWS—Issues and Options
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- Working Paper E: Private Sector Investment Needs Assessment
- Working Paper F: Water Sector Financing: Selected Issues in Financial
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- Working Paper G: List of References, Contacts and Glossary

PREFACE

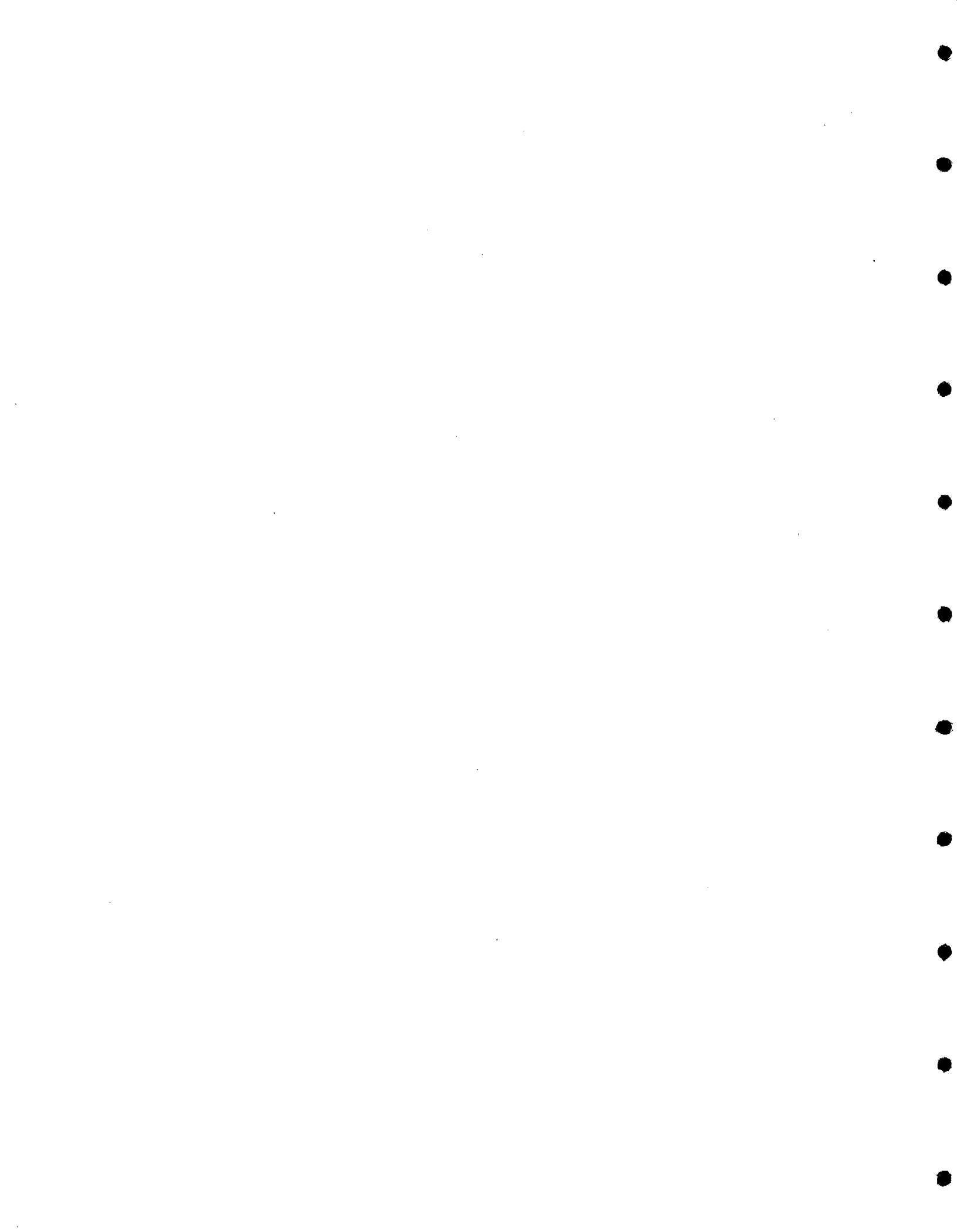
PRIVATE SECTOR PARTICIPATION IN URBAN WATER SUPPLIES: ISSUES FOR INVESTMENT IN INDONESIA

The purpose of this study is to assess the prospects for increasing private sector participation in the Indonesian urban water supply sector. The analysis has concentrated on capital investments and particularly on the "build, operate and transfer" (BOT) model. Issues arising in three policy areas were addressed—financial, legal, and public policy and administration.

The report is organized into three volumes. Volume I provides a summary of findings, implications, and recommended next steps; Volume II sets forth proposed administrative guidelines for water authorities in dealing with a private investor; and Volume III comprises a series of Working Papers (A through F) which deal with specific policy areas that need to be addressed if the Government of Indonesia is to successfully involve the private sector.

The study was funded by USAID/Jakarta and conducted by the Water and Sanitation for Health (WASH) Project. Field work and preparation of the reports were undertaken in Indonesia from October 1 to December 15, 1990. Consultants involved in the preparation of the report (and their respective specialties) include the following: S. Watt (team leader and engineering), Jane Walker (project manager and finance), S. Biddle (public policy), G. Letterman (legal), Lisa Kulp (finance), Tantri Marbun (finance), B. Nainggolan (finance), R. Thabrani (legal), D. Soetjipto (legal), R. Roesli (public administration), Harayatiningsih (public policy), and M. Maulana (engineering).

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ACRONYMS

BOT	Build, operate, and transfer (model)
BPAM	<i>Badan Pangelola Air Minum</i> . Interim Local Water Supply Organization under the auspices of the Ministry of Public Works
GDP	Gross Domestic Product
GOI	Government of Indonesia
IUIDP	Integrated Urban Infrastructure Development Program
PDAB	<i>Perusahaan Daerah Air Bersih</i> . Provincial water enterprise which develops multi-use water sources and sells water to PDAMs
PDAM	<i>Perusahaan Daerah Air Minum</i> . Regional water supply enterprise with autonomous status under local government jurisdiction
PSP	Private sector participation
SOW	Scope of work



Volume I

A STRATEGIC FRAMEWORK FOR INCREASING PRIVATE SECTOR PARTICIPATION IN URBAN WATER SUPPLY IN INDONESIA

EXECUTIVE SUMMARY

Background to the Study

In the autumn of 1990, the Water for Sanitation and Health (WASH) Project carried out a three-month study to assess prospects for increased private sector participation (PSP) in urban water supply in Indonesia. The study, financed by the United States Agency for International Development (USAID), had two purposes: to set out the factors that should be considered by the Government of Indonesia in developing a strategy for increasing private sector participation in urban water supply; and to prepare administrative guidelines for water authorities in dealing with the private investor.

The consultants reviewed the scope of work at a three-day team planning meeting in Jakarta in October 1990 and followed this with discussions with the Government of Indonesia and USAID to clarify the terms of the assignment. The conclusion from these discussions was that the primary interest in PSP was in finding ways of tapping both domestic and foreign private investment capital to augment public funds for water supply projects. As a consequence, the analysis focused on mechanisms that provide significant "off-budget" private capital.

The study team considered the classic range of alternatives for PSP in the water supply sector, including service and management contracts, leasing arrangements, and the build, operate and transfer (BOT) model and divestiture. An important distinction in reviewing these alternatives rested on the objective of capital formation to increase water supply capacity and distribution facilities to deal with growing urban populations, about 60 percent of which remain unserved. The main PSP instrument investigated that delivered the objective of capital formation is the BOT model. In the review of the compendium of PSP options, there is a major threshold that is crossed in moving to the BOT/concession and divestiture options. This threshold is the actual commercial risk of equity participation and asset ownership in capital investment projects by the private sector.

Nevertheless, during the course of the study, it became apparent that other forms of PSP such as those that strengthen institutional and management efficiency could be of significant importance to the GOI in its efforts to improve the performance of the sector.

The study team prepared a series of working papers based on data from other urban sectors in Indonesia with PSP experience, several case studies of private sector initiatives in capital investment for urban water supply, and informal surveys of foreign and domestic private investors interested in the development of water supply facilities. The institutional structures and the numerous Indonesian laws and regulations affecting PSP were reviewed to assess their influence on the shape and likely outcome of strategies to increase private sector involvement in the urban water sector.

Investments in water supply projects were viewed against the backdrop of the current investment climate in Indonesia, which is robust for both foreign and domestic investment. New investment is concentrated in manufacturing and is characterized by links to foreign export markets, high rates of return on equity, and investment activities that are flexible and can respond to market changes. Domestic investors rely on short-term capital financing, say 3 to 5 years, due to the lack of a long-term equity market; the average size of domestic investment tends to be modest, between US\$ 10 to 12 million. This investment profile contrasts with the characteristics of investment in the water supply sector which tend to be capital intensive, inflexible in terms of alternative use, and reliant on well-established financing facilities that can provide long-term credit.

The study found two main types of private "off-budget" investment in water supply projects in Indonesia: supply-led source development projects; and "enclave" water supply development projects. The former are characterized by development initiated by firms with a vested interest in water supply projects from a management, design, or construction base. The commercial motivation behind these developments is the work created by the development and its subsequent operation and management. The latter type is developed by investors where water is part of a larger development; water supply is important but not the most critical component. These projects are associated with a larger initiative, e.g., a tourist development, industrial estate, or a private housing complex. The commercial motivation of "enclave" developments has been the profit to be realized from the related activity, e.g., industrial production, tourism, and improved land values.

Examples of private initiatives in water supply are not plentiful. Limited data from project investigations indicate that international financing resources are drawn to larger-scale projects (minimum US\$ 50 million), both supply-led and enclave types. Domestic financing appears primarily attracted to enclave projects. If the GOI wants to promote private sector investments in water supply, it needs to look realistically at existing market conditions and work within these parameters.

The study team reviewed important recent initiatives in PSP in other urban services. Lessons learned from transport, electricity, telecommunications, and solid waste removal indicate that proactive initiatives on the part of the GOI are required to stimulate activity. It was necessary, for example, for the GOI to restate and clarify policy regarding the desirability of private sector investment before the private sector would show interest. The private sector would be

unresponsive to investment opportunities until the public sector put in place a clear regulatory framework that the private sector considered unambiguous. More specific issues that would feature in any private sector negotiations include provision of guarantees in order to secure long-term financing; public or private control over changes in tariff levels and appeals on these charges; ownership of physical assets; and the need for an unambiguous legal framework. To date, the most successful example of private capital investment appears to be in telecommunications.

Key Characteristics of the Water Supply Sector

The study team compiled a composite of the current legal, financial, and institutional characteristics of the water supply sector in Indonesia to give perspective to opportunities and constraints facing private sector initiatives. Overall a high percentage of water supply is already controlled by the private informal sector. For example, in Jakarta up to 80 percent of consumers use private wells for residential and industrial water supply; water vendors are also common.

Institutional Characteristics

The formal urban water supply sector in Indonesia is administered by public agencies either reporting to the Ministry of Public Works (BPAMs) or under the broad jurisdiction of the Ministry of Home Affairs (PDAMs). The latter, in compliance with the GOI's policy of decentralization, are within the structure of local government. The BPAMs, who enjoy central government support, will continue to be part of the central government until they have reached a financial break-even point at which time they will achieve PDAM status. This process of transfer is supposed to be complete by the end of 1993, by which time all urban water supply will be under the PDAM structure. As a result of this change a number of PDAMs are performing a new and unfamiliar role. Though a number of water authorities have enjoyed autonomous PDAM status for a considerable period, over 20 years in some cases, the transition period creates uncertainties which may discourage private sector interests. Further, this complex and shifting organizational structure of urban water supply with a number of participating local, provincial and national ministries and legislative bodies may exacerbate difficulties in concluding joint venture arrangements.

The absence of an independent regulatory body that can objectively balance the conflicting interests of the public and private sectors may be the most significant institutional bottleneck to private sector investment participation. This issue is particularly important in rate setting and control over tariffs. At present these are approved by local leaders who also benefit from revenue sharing of a PDAM's positive cash flow through transfers to municipal governments. There is no recourse in law; for example, there is no appeal procedure for a private enterprise to challenge official decisions over rate changes. Further, PDAMs are required to pursue social goals, for example, a social tariff, while simultaneously achieving financial self-sufficiency. This dual mandate may have the effect of discouraging private sector

entrepreneurs whose main goal is commercial viability. Finally, vested interests in maintaining the status quo of PDAM functions may also discourage private sector initiatives. PDAMs are eligible for a number of benefits under the GOI umbrella that would be unavailable if the functions of the PDAMs were fully controlled by the private sector. These activities, for example training, would be paid for directly by the water users rather than indirectly through government subsidies. An increased role for the private sector in performing functions of the PDAMs will ultimately reduce the technical and financial functions which the PDAMs perform. Their purpose may need to be redefined and possibly evolve into a regulatory or oversight role.

Financial Characteristics

Current policy is that PDAMs should operate on a full cost recovery policy. For BPAMs to reach PDAM status, they must also achieve a break-even point where costs of operation are completely covered by revenues from water sales, connections fees, etc. Evidence from a number of water utilities indicates that cost of capital replacement through depreciation allowances and maintenance of capital replacement funds are calculated but ignored in financial planning. Studies also indicate that expenditures for operation and maintenance are perhaps 30 percent below the necessary level to achieve optimum operation. These observations have two major implications. First, inadequate knowledge of the full cost of production provides a poor link between the cost and the price of water (the tariff). The failure to match the cost and price of water will undervalue the resource, lead to failures to invest at the appropriate time, and cause inefficient use. The private investor has a vested interest in knowing his full cost and will price and sell water accordingly. Second, despite the emphasis on financial viability, water pricing in Indonesia is designed to achieve social policy objectives and is not based on full cost recovery. As a consequence, the long-term financial soundness of water authorities is in doubt.

Legal Characteristics

The study's legal research revealed numerous Indonesian laws and regulations at the national, provincial and local levels that will influence PSP in the urban water sector. They are clear in their statement of policy that such participation is encouraged; for example, Presidential Decree No. 21 of 1989 removed water supply from the restricted investments list. But they are far less clear in stating on what basis the private sector may participate, what standards the GOI will apply in evaluating applications, and how the GOI will ensure that its public policy aims are consistent with the commercial needs of the private sector.

The study team catalogued a number of contradictions and inconsistencies in the existing legal and regulatory framework, the most important of which are: limitations on the authority of PDAMs to enter into a joint venture with a private party and commit assets as equity; inconsistency between the Basic Law of 1945 and private ownership and management of a water utility; and apparent limitations on foreign private sector investment in water supply.

For the private sector investor, the consequences of legal and regulatory inconsistencies, the absence of a regulatory framework, and an unpredictable rate-making mechanism raise the perceived level of investment risk. This may particularly apply to the foreign investor. The study has demonstrated, however, that these investors are important and potentially can commit larger investment capital than local investors for single projects.

Models for Increasing Private Sector Investment Participation

The study team examined ways of tapping private sector "off budget" capital, both international and domestic, for development of urban water supply systems. The variety of PSP instruments, including lease arrangements, management contracts, and the purchase of specified services such as bill collecting or the management of the accounting systems, tend to increase the stock of human rather than financial capital. They may strengthen the institutional capacity and could lead to long-term budgetary savings through more efficient operations, better revenue collection, a reduction in unaccounted-for water, and an increase in usage levels as a consequence of well-served and satisfied customers. The BOT approach, however, includes the critical element of capital formation and creation of new capital assets; it is on this approach that the study focused. While a detailed assessment of other instruments was not included in the study, the consultants believe that there are opportunities to employ these options in a selective fashion.

The concentration on the BOT approach is predicated on the understanding that this model is of primary concern to the GOI because it is an effective mechanism for attracting "off budget" capital, thereby freeing public resources for alternative investments. The BOT approach also is assumed to provide significant gains in construction and operating efficiencies through the introduction of private sector management and the continuous transfer of new technology over the concession period. A review of international BOT projects by the consultants indicated that the BOT financing approach is not the least-cost option when compared with public funding or funding that is guaranteed in some way through the public sector, e.g., World Bank loans. The cost of borrowing reflects higher costs for the private sector in terms of risk capital as well as expected rates of return on equity, given alternative investments in the market. The ability of a private consortium to raise debt and equity financing to cover the usually large investment costs of a BOT arrangement is dependent on reliable agreements with the end-users and on strong contractual guarantees concerning the revenue streams. The classic example of BOTs in water supply is bulk water purchase. The Umbulan Spring Project fits this profile. It is clear that debt financing guarantors would perceive that bulk water guarantees by the Government of Indonesia would be more reliable than those by the city of Surabaya alone. Further, "take or pay" agreements are essential to BOTs in the water sector; governments that do not wish to enter into such agreements must appreciate the difficulty of negotiating BOT arrangements with international financing.

The BOT model is attractive in that it provides capital infrastructure at no cost to the government because it is "off budget," but it imposes an increased cost on the consumer in the form of higher tariff levels. Current levels, for example, may be subsidized through the lack of sufficient allowances for capital replacement or depreciation. The higher cost of private sector water is predicated on the assumption that fully private water companies must be commercially viable without subsidies. Financiers who commit long-term equity must have confidence in the overall commercial structure and in the ability of the new company to generate revenues and provide a competitive rate of return on the investment. There is an understandable but misleading inclination to view a private facility in the water sector as analogous to a public enterprise. A profit-driven private BOT is an island in a sea of government facilities operating on a different set of assumptions, including the provision of a social tariff. It is apparent that the government must trade off consumer interests and private sector interests. The market reinforces this conclusion by drawing private sector investment to consumer categories that are less risky, such as industrial and tourist developments.

Main Implications for Strategy Design

The findings of the study team have important implications on how the GOI should proceed in encouraging PSP in the water sector. The existing characteristics of the sector present a number of obstacles that may slow down this process. It is important for the GOI to distinguish between those constraints that can be eased (for example, financial guarantees and incentives, clarification of laws, and an independent regulatory system) and those that are inherent in all water supply projects (for example, the misfit between investment expectations of the private sector and the social service nature and traditional public sector financing of water supply).

The principal implications for the design of the privatization strategy based on the analysis of the sector are:

- The basic premise that private sector funds can help close the gap in investment capital needed to meet target coverage rates in urban areas is sound. The social and financial costs associated with the changes accompanying private sector involvement, for example, the costs of setting up an independent regulatory authority, must be appreciated at the outset. The alternative is ad hoc private sector development.
- Private participation should be viewed as one part of an overall game plan, not as an end in itself, to improve urban water supply. Private participation should be used where appropriate.

- Because of the conflict between private sector policy objectives of commercial viability and social equity considerations, private participation should be considered primarily in areas where consumers can bear the full cost of recovery. These include "enclave" developments such as industrial developments, tourists facilities, and private housing estates.
- Any strategy for PSP in the urban water sector must take its direction from market forces. The GOI, while keeping in mind public goals, must work with the private sector in its specific areas of investment interest. Disaggregation may be necessary in policy pronouncements in terms of size of investments and source of funding, e.g., international or domestic.
- The GOI should consider the creation of a regulatory framework to clarify ambiguous and contradictory laws and procedures and to mediate conflicts that could escalate and take on political significance. The absence of a clear regulatory framework may slow down the entry of private investors.
- In the financial area, the GOI must provide two main guarantees to make the urban water sector more attractive to private capital. The first concerns tariffs and includes the location of the authority to make tariff changes, the process for making such changes, control over the tariff, and whether it can be raised to compensate adequately the private sector investor. The second guarantee covers the quantity of water (volume sales) and is most specific to bulk water supply agreements.
- In the institutional area, especially with regard to the PDAM structure, attention needs to be given to how private sector enterprises will interact with PDAMs. For joint ventures with PDAMs, clarification is needed over the basic authority of PDAMs to enter into contractual relationships with a private entity, ownership of PDAM assets, the extent to which local governments can intervene and alter the content of a PDAM/private sector partnership, and the overall confidence that the private sector has in the managerial competence of the PDAMs. Further, the question needs to be raised whether private sector agencies can formally operate water supply installations outside the authority of the PDAMs but within GOI regulations for commercial enterprises.

Next Steps

The central conclusion of the study is that PSP in urban water supply is feasible and desirable only if steps are taken to make the sector more attractive to prospective investors by removing or modifying the constraints identified and establishing a regulatory framework and related policies to protect the public interest.

It is clear that ad hoc private sector developments already exist in the water supply sector and several large private sector investors have demonstrated keen interest in certain water supply projects. The GOI must examine difficult policy choices in working with market forces to increase private sector participation. The study's recommendations for increasing private sector participation are:

Revalidate the Basic Policy

This review should consider five difficult issues:

- The willingness of the GOI to modify various laws and regulations to facilitate private sector involvement
- The extent to which the GOI in its negotiations with prospective investors is willing to provide price and quantity guarantees
- The role of local government and the need for assurances that local governments will not intervene unilaterally
- The location of rate-making authority and the extent to which tariffs can be raised to ensure a profitable return to the private sector partner
- The role, location, and composition of a regulatory authority

Restate the Basic Policy

The GOI should restate its policy on PSP, dealing directly with the five issues listed above and providing broad guidance at all levels of government regarding its intent and the steps it plans to take.

Address the Constraints and Devise Solutions

The GOI should consider the seven major recommendations that follow:

1. Changes in laws and regulations to remove ambiguities and inconsistencies that discourage private sector investment
2. The types of guarantees prospective investors should and should not be given to encourage participation in the urban water sector
3. Local government assurances to prospective investors against unilateral intervention that at the same time preserve the authority of local government and legislative bodies
4. Definition of the authority and process for adjusting water tariffs so that the public interest in social equity and the private investor's interest in revenue protection are held in balance
5. The establishment of a regulatory structure that would define authority, the relationship between the investor and various local government bodies, and the review and approval process so as to safeguard both the public and private interests
6. A PSP plan that would establish the types of projects in which investment is encouraged; the standards of coverage and quality assurance to be met; the technical standards that are expected; and an organizational roadmap to assist the private sector in its search for profitable investment opportunities

This plan would outline: a policy for encouraging "enclave" developments in a manner consistent with other policy goals such as the financial viability of the PDAM structure and the maintenance of economies of scale in water supply; and a policy for BOT developments—mainly large projects such as bulk water supply or treatment suited to international market conditions for size of investment—that clarifies the terms acceptable to the GOI.

7. A review of measures to strengthen the institutional capacity of the PDAMs to ensure they are placed on an equal footing with private sector partners

The solutions to increase PSP depend on policy choices that only the GOI can make. It is recommended that a workshop be held for key officials from the ministries concerned and for representatives from the private sector to set out major issues and seek solutions.

**A STRATEGIC FRAMEWORK FOR INCREASING
PRIVATE SECTOR PARTICIPATION
IN URBAN WATER SUPPLY IN INDONESIA**

1. INTRODUCTION

1.1 Purpose

The purpose of the study is to assess prospects and recommend a strategy for increased private sector participation in urban water supply in Indonesia.

It was designed to investigate:

- Characteristics of the Indonesian water sector that could influence the nature and level of private sector involvement
- Policy issues that should influence the approach of the Government of Indonesia (GOI) to private sector participation
- The level and nature of private sector interest in the Indonesian water sector
- Institutional, legal, regulatory, and financial constraints that should guide the design of a strategy to increase private sector participation
- Lessons from other developing countries and different approaches to private sector participation that might be applied to the Indonesian situation.

The study was carried out between October 1 and December 15, 1990, by a WASH (Water for Sanitation and Health) Project consulting team financed by the U.S. Agency for International Development and composed of Indonesian and foreign consultants with specialties in engineering, law, economics, finance, and public administration.

The study consists of a summary of findings, implications, and recommended next steps (Volume I); suggested administrative guidelines for water authorities dealing with a private investor (Volume II); and Working Papers on issues the GOI must address if it is to successfully involve the private sector (Volume III). Volume I has three parts:

- It summarizes the key findings of the Working Papers (Volume III) produced during the study.
- It sets forth important implications for GOI policymakers that flow from these findings and must be considered in developing a strategy for increased private sector participation in urban water supply.
- It recommends an action plan to increase private sector participation in a manner consistent with Indonesian conditions and GOI policies.

1.2 Definitions

The concept of private sector participation (PSP) includes instruments and public/private relationships ranging from the sale of a public enterprise to a private buyer (divestiture) to the purchase of private sector services by a public agency (service contracts), and reflecting varying market conditions. Table 1 sets out the forms of PSP frequently used in the water supply sector.

Since water supply is usually a natural monopoly and competition in day-to-day operations is not practical, public regulation or oversight is necessary. The more frequently competition can be introduced into the process, the less likely regulatory authority is needed. The presence of competition, which provides the incentive to maintain quality and minimize costs, is understood to be a prime condition underlying the efficiency of the private sector. The longer the period between periodic competition, say annually with service contracts, 2 to 3 years with managements contracts, or up to 15 years with BOT arrangements, the higher the degree of regulation and oversight necessary. Figure 1 graphically represents the increase in regulation required given the decrease in competition as the level of privatization increases.

The GOI's current and primary interest in PSP is in tapping private investment to augment public funds; the scope of work (SOW) for the study stressed that intent. As a consequence, the following analysis concentrates on mechanisms for the infusion of private capital, not on institution building or the provision of water by small-scale vendors. PSP, unless otherwise indicated, is limited to schemes such as build, operate, and transfer (BOT) that pursue that objective.

An important consideration in reviewing the alternatives of private sector participation is the objective of capital formation. In a review of PSP options, an important threshold is crossed in moving from service, management, and lease type contracts to BOT/concession options and divestiture. This threshold is the actual commercial risk of equity participation and asset ownership and is not a feature of models concerned with human capital formation, institutional strengthening, and efficiency gains. The significant equity requirements in large BOT projects cannot be overemphasized. This is reflected in a generalized way in Figure 1 showing the increase in commercial risk associated with a higher degree of private sector

Table 1

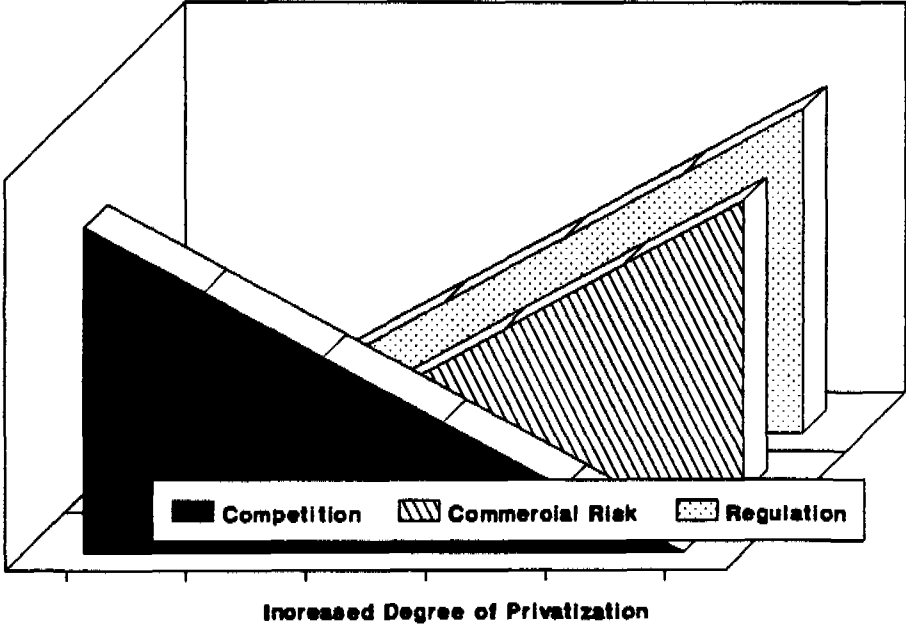
Types of Private Sector Participation in Water Supply

TYPE	DEFINITION
Service Contract	A public water company engages a private firm to provide specific operational services such as meter reading, billing and collection, and operating production facilities.
Management Contract	A contractor assumes overall responsibility for operation and maintenance of the water supply system, with freedom to make day-to-day management decisions.
Lease Contract	A private firm rents facilities from a public authority and assumes responsibility for operation and maintenance. The lessee finances working capital and replacement of capital components with a limited economic life (not fixed assets).
Build, Operate and Transfer/Concession	A private firm finances investments (fixed assets) in addition to working capital. Assets are owned by the firm for the period of the concession (say, 10-20 years) and are transferred back to the public authority at the end of this period.
Divestiture	The private sector takes complete control through the purchase of public sector assets.

Source:

Adapted from T. Triche, Infrastructure Notes, Infrastructure and Urban Development Department, PRS The World Bank September 1990.

Figure 1
Risk, Competition and Regulation



participation, which in turn requires more rigorous regulation and oversight. (This observation is somewhat counterintuitive as it is expected that a competitive market would be more risky. For water supply, this is counterbalanced by the lumpiness of the investment.)

Nevertheless, it became apparent during this study that those forms of private sector participation intended to strengthen institutional and managerial efficiency could be of significant importance to the GOI in its efforts to improve the performance of the urban water sector. While institutional strengthening does not have a dramatic budgetary impact in terms of new capital formation, it is often an essential precondition to an effective working relationship with the private sector. Several of the Working Papers and the last section of this volume stress the point that it should be a part of any comprehensive strategy to increase private participation in urban water supply.

2. SUMMARY OF PRINCIPAL FINDINGS

2.1 Private Sector Participation in Urban Water Supply—Lessons Learned From Other Countries

There has been considerable international interest in public/private participation in the construction of public infrastructure through the application of the so-called build, operate, and transfer (BOT) formula. Although the list of exploratory discussions is long, the actual number of BOT investments that have begun operating is no more than perhaps two dozen worldwide. In Asia, most BOT projects have involved power generation or toll roads. Only Malaysia has attempted a water supply project involving a pipeline and a treatment plant.

There is an abundant literature on private sector participation and on the conditions and factors conducive to the design of successful public/private partnerships. Blending these insights with hard evidence from the few case studies available can provide useful guidance to senior policymakers. The lessons learned that are most applicable to the Indonesian situation are as follows:

- **Be ready for a long and complex process.** The design and negotiation of a large joint venture infrastructure project such as a water treatment facility is extraordinarily complex and may require several years of difficult planning and discussion.
- **Be clear about basic objectives.** Joint ventures of public/private partnerships are much more likely to be successful where there is government consensus on public policy goals and an appreciation of the costs and benefits of involving the private sector.

Policymakers need to agree about what they can expect from private involvement in order to identify unintended consequences, increase the likelihood of later support, and improve their future ability to evaluate progress. Where negotiations with private entrepreneurs have faltered or later misunderstandings have arisen, it is often because consensus did not exist.

- **Understand the private sector.** Public officials must understand the motivations and needs of the private sector partner if negotiations are to be successful and the subsequent relationship sustained.

Private firms exist to make a profit, not to provide a social service. Private management of a public enterprise gives a commercial firm a monopoly and the freedom to operate in a manner that may be

inconsistent with social goals. Understanding this at the outset is essential if subsequent misunderstandings are to be avoided.

- **Balance costs and benefits.** A final determination of the wisdom of private sector involvement should be based on an objective balancing of benefits and costs. The benefits include the infusion of additional capital, the likelihood of more efficient operations, and the ability to reach public goals for service coverage more quickly. The costs include an erosion of government control and the strong likelihood of increased water tariffs.
- **Consider the question of "additionality."** An issue that has influenced the approach of other countries to PSP is whether the flow of external capital is really a net addition to the society's financial resources. If capital is simply diverted from some other purpose or if the cost of government guarantees exceeds the value of the investment, the society has not captured an absolute increase in financial resources.
- **Adapt to local conditions.** It is essential to adapt the form of PSP to local needs and conditions. A review of selected examples makes clear that the specifics of each BOT arrangement are carefully tailored to the special characteristics of each country and each project situation.

2.2 Special Characteristics of the Urban Water Sector

The urban water sector has its own social, economic, and financial characteristics that set it apart from other sectors, influencing the shape and nature of PSP and the success or failure of private/public negotiations. The conditions necessary to stimulate investment in the power sector, for example, may not be appropriate for water. An understanding of this difference is essential.

The study team felt the following characteristics were most applicable to Indonesia:

- **Water as a public good.** Water in many societies is viewed as a public resource to be shared by all without constraint. As a consequence, it may be hard to introduce the concept of commercial exploitation for private gain and to persuade public water authorities to accept practices designed to cover costs and allocate water according to market forces.

Partly because of the global environmental movement, these attitudes are beginning to change and societies are coming to realize that water is a scarce and valuable resource. But this recognition and the institutional changes that must accompany it are occurring slowly.

- **Subsidized price to achieve social goals.** It is common, although undesirable, for countries to subsidize the price of water in order to achieve the social goal of more equitable distribution of income. Not only is water often provided at less than the direct cost of production, but the indirect costs of pollution and aquifer depletion are frequently ignored. Ignoring the full cost of water will undervalue the resource, lead to failures to invest at the appropriate time, and cause serious misallocations among users. (And in the case of Indonesia, below-cost pricing impedes the program to place water authorities on a sound financial basis and undercuts efforts to decentralize government administration.)
- **Revenue loss and demand management.** Water consumption from piped sources tends to decline when prices are increased, because consumers either economize on consumption or seek cheaper alternatives. This can pose a serious problem for water authorities trying to bring costs and revenues into line, since an increase in tariff rates can result in a drop in total revenue.
- **Large and "lumpy" capital requirements.** In order to take advantage of economies of scale, water facility investments in source works, treatment plants, and pipelines tend to be very large and inflexible. Investment errors can be costly. Because of this, it is very important for private investors to be able to make realistic demand forecasts and reliable revenue projections.
- **Monopoly characteristics.** Water authorities are inherently monopolistic—they control an entire market and can manipulate prices and manage supply without fear of competition. Because water is an essential commodity and providing it has a social purpose, water authorities traditionally operate in the public domain. When private firms become involved, they do so within the framework of a regulatory process designed to balance public and private goals.
- **Water as an intermediate objective.** Private sector investment in water is often subordinate to some other commercial objective, and the provision of water is regarded as an intermediate goal. The principal return to the investor comes from a related activity of which

water is a necessary part. This form of private sector activity is important in any country's overall water sector strategy. However, since industrial and commercial development typically constitutes from 20 to 25 percent of total water usage, this type of private sector activity will satisfy only a modest proportion of total public consumption.

2.3 The Indonesian Investment Climate: General Considerations

The current investment climate in Indonesia is robust for both foreign and domestic investment. Confidence in the economy is high and medium-term growth rates for non-oil GDP are now at 6 to 7 percent a year.

Indonesia has deregulated its banking system, relaxed import and licensing restrictions, made the rupiah freely convertible, allowed a gradual depreciation of the rupiah against the dollar, and taken aggressive steps to strengthen its non-traditional export sectors. As a consequence of these actions, both domestic and foreign investments have accelerated.

Total investment is now growing at the dramatic rate of 13 percent per year with the private component increasing by nearly 18 percent in 1989. New investments are concentrated in the manufacture of chemicals, paper and paper products, and textiles, although there is vigorous activity in virtually all sectors. Investment from domestic sources averages roughly \$12 million per activity, while investment from foreign sources averages roughly \$50 million per activity. Japan is the largest source of foreign industrial investment.

The current investment boom has the following characteristics:

- It is frequently linked to the foreign export market.
- The unit size of domestic investments tends to be modest (about \$10 million), reflecting the immaturity of capital markets and the commercial attractiveness of smaller-scale industrial activities.
- Investment choices concentrate on activities with the flexibility to respond to shifting market forces and to adjust the mix of capital and labor to these changes.
- Domestic investors tend to rely on short-term capital financing in the neighborhood of 3 to 5 years at real interest rates of 12 percent to 14 percent.

- Investors normally expect a relatively high rate of return on capital, in the area of 30 to 40 percent.

In sum, Indonesian investors deal with modest sums and demand a quick return, a high profit, and considerable flexibility to adjust to changing market conditions.

This contrasts with the characteristics of investment in the water sector which tend to be inflexible, capital intensive, and reliant on well-established financing facilities that can provide long-term credit. The position is clouded, however, when investment in water supply is part of a larger development like tourism, for example. The umbrella development may exhibit characteristics more closely matching the current investment climate—high profits and a quick return on investment.

2.4 Urban Infrastructure in Indonesia: The Role of the Private Sector

Urbanization is increasing rapidly in Indonesia. The population of its urban areas is expected to grow from 52 million in 1990 to 79 million by 2000 and to triple to 152 million by 2025.

The GOI has adopted a basic needs strategy designed to provide urban populations with a package of services including sanitation, solid waste removal, primary health care, education, and water supply. The strategy has been embodied in the Integrated Urban Infrastructure Development Program (IUIDP) which has formulated investment packages on a city-by-city basis. Currently, about one-third of urban infrastructure investment is for water. To finance future needs, the GOI plans to double the current level of investment over the next five years.

In addition, the GOI has embarked on an ambitious program of organizational and fiscal decentralization designed to encourage increased local financing. Despite these efforts, the gap between need and capacity to respond will continue to increase because of high population growth rates. In the case of water, the number of urban dwellers without safe potable water is estimated to increase from about 20 million in 1979 to roughly 40 million by 1999.

The GOI's commitment to the decentralization of municipal services began in the mid 1970s. Most of the attention focused on the transfer of responsibility from the central to local governments, with the most accelerated activity in the water sector. The role of the private sector in the devolution of responsibility is quite recent and began in the 1980s. Because the idea of private sector involvement in the provision of urban services is so new, it is not surprising that its role to date remains small.

However, there have been important recent initiatives in at least four areas: toll roads, electricity, telecommunications, and solid waste removal. Although these sectors are unique and it is risky to generalize, experience from them provides several lessons that may be useful in developing a strategy for greater involvement of the private sector in urban water supply.

- It has been necessary in at least two instances (toll roads and electricity) for the GOI to restate and clarify basic policy regarding the desirability of private sector investment before the private sector would show interest.
- The private sector was unresponsive to investment opportunities until the public sector had put in place a regulatory framework and a clear set of regulations and procedures that the private sector could rely on in determining whether or not to invest.
- In all instances the instruments for private sector involvement have been adapted to the specific situation. Standard off-the-shelf approaches have been tailored to the special needs of the sector and the Indonesian market.
- The most important issues that have dominated the negotiations are:
 - Whether and to what extent the government is willing to provide the guarantees that the private sector feels are needed for long-term financing
 - Whether responsibility for establishing tariff levels will be in public or private hands
 - Ownership of the physical assets of the facility
 - Continued rupiah depreciation
 - The need for an unambiguous legal framework
- To date, the most successful instance of private capital investment appears to be in telecommunications. The factors for success include: inherent profitability; a clear legal and implementation framework; the design of creative financial instruments fashioned to meet the needs of both private and public interests; flexibility in the scale of investments.

2.5 Key Characteristics of the Indonesian Water Sector

The Indonesian water sector has a number of key characteristics pivotal to the design of any strategy to increase private sector participation. These are described and analyzed at some length in the Working Papers and summarized below.

Water Resource Characteristics

Both surface water and groundwater supplies in Indonesia are plentiful, although extraction and transmission can be complicated by poor quality, distance from urban centers, and seasonal variations in natural supply.

In 1980, water supply coverage in urban areas was only about 35 percent, among the lowest in Asia. By 1985, the percentage of urban housing provided with water had grown to 40 percent but, because of increases in the urban population, increased to only 41 percent by 1989, despite a goal of 75 percent and a doubling of the production capacity.

Water and water-related issues (wastewater, flooding, erosion, and groundwater) pose the most serious environmental challenges. They affect both rural and urban areas but are particularly acute in the metropolitan centers because of the impact of dramatic population growth. Problems include groundwater contamination, saline intrusion, aquifer depletion, poor sanitation, sea pollution, flash floods, and siltation. The water quality of the rivers of Java is poor, and not surprisingly Indonesia has experienced chronically high levels of diarrhea and other water-related diseases.

The growth in demand for water in urban areas is related to the growth rate of urban populations. Most projections suggest a doubling by early in the next century. Against this, the GOI has established a water coverage target of 85 percent for urban areas by the year 2010. To meet this target, water supply for small and medium cities would have to increase at a compound rate of 8.7 percent a year and for large cities by 6.8 percent a year. It is generally believed that these projections are highly optimistic.

There are two major inefficiencies in the management of water supplies:

- **Unaccounted-for water loss is high.** For water authorities in Java, unaccounted-for water varies from 20 to 65 percent of total piped water, and in Jakarta alone reaches 50 percent.
- **Groundwater extraction is largely uncontrolled.** At present, groundwater is extracted mainly by private users for residential or industrial purposes. In theory, licenses are issued, usage is metered, and charges are levied by the water authority. In practice, unlicensed wells are common and tariffs are both low and uncollected.

Underpricing in turn leads to wasteful consumption, a particularly serious issue in coastal areas, where saline intrusion is a problem.

Financial Characteristics

The financial characteristics of urban water supply in Indonesia are central to the development of a strategy to attract private sector investment. They include:

- **An organizational emphasis on full cost recovery.** As part of the GOI's program to decentralize and rationalize government operations, water authorities are gradually being given autonomous status (the PDAMs) under the jurisdiction of local governments. These agencies are supposed to operate on the basis of full cost recovery, although there is substantial evidence that few have yet been able to accomplish that objective.
- **Poor linkage between the cost of water and the tariff structure.** Despite the emphasis on financial viability, water pricing in Indonesia (as in most developing countries) is designed to achieve social policy objectives and is not based on full cost recovery. As a consequence, the long-term financial soundness of the water authorities is in doubt.
- **Inadequate knowledge of full cost of production.** This is responsible for insufficient set-asides for operation and maintenance and capital replacement.
- **Close relationship between volume sold and price.** Domestic consumption of piped water is somewhat price elastic, i.e., increases in the price of water lead to a drop in consumption and a resultant drop in total revenue.
- **Intermediate capital requirement.** Capital costs identified for a number of water supply projects are below \$50 million. This is probably not enough to attract foreign investors but beyond the capacity of most domestic investors.

Institutional Characteristics

Urban water supply in Indonesia is administered by public agencies either reporting to the Ministry of Public Works (BPAMs) or under the broad jurisdiction of the Ministry of Home Affairs (PDAMs). The latter, in accordance with the GOI's policy of decentralization, are part of the fabric of local government. The former will continue to be part of the central

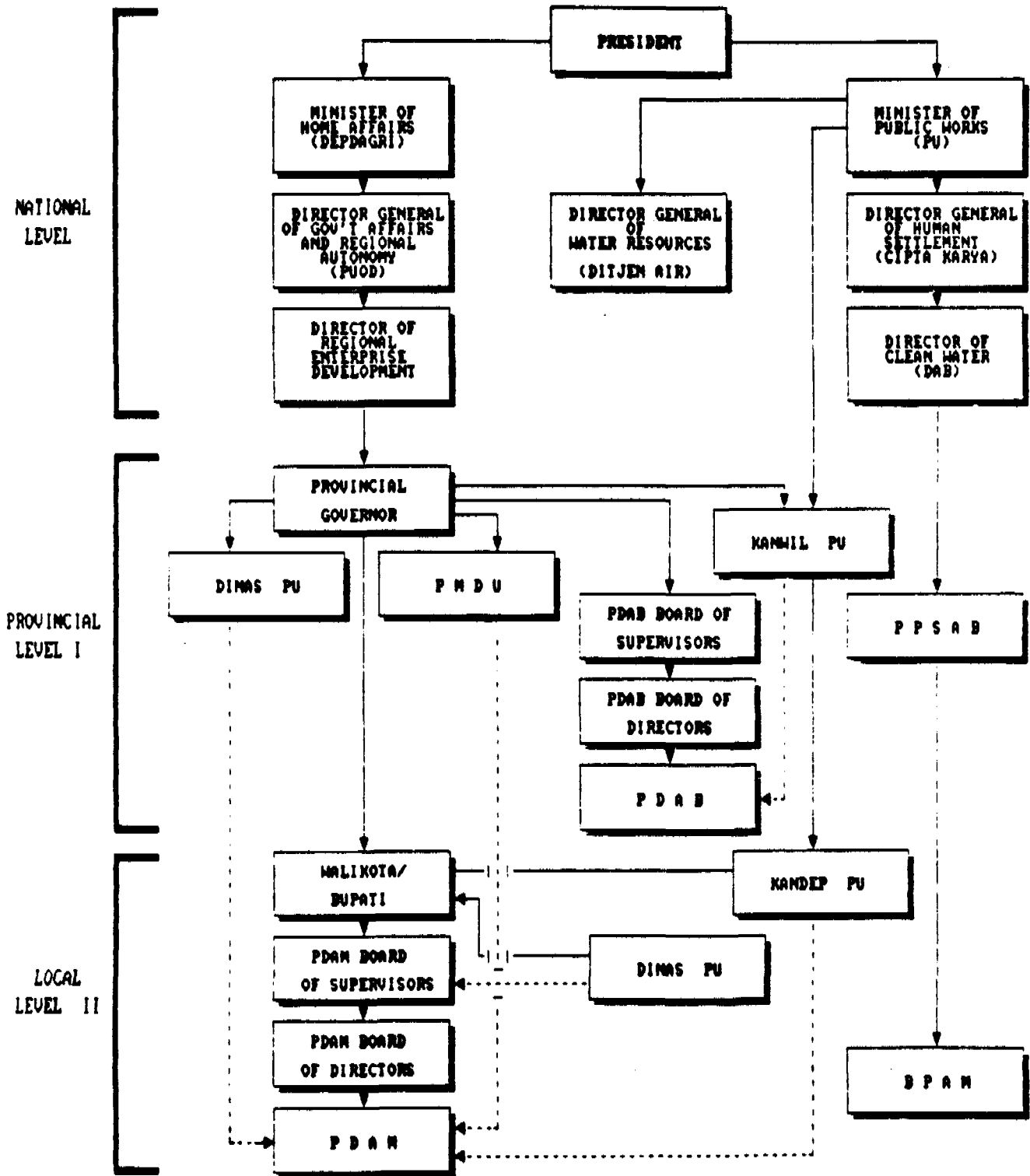
government until they have become financially self-sufficient, at which point they will be given PDAM status. The process is supposed to be complete by the end of 1993. Figure 2 sets out the organizational structure of the formal water sector.

There are several characteristics of the current institutional structure that will have a significant influence on the shape and success of any strategy to increase private sector involvement in the urban water sector:

- **The entire administrative apparatus is in a state of flux.** The majority of PDAMs are performing a new and unfamiliar role, while the BPAMs are preparing to graduate from their dependency on central funding from Public Works. These changes in the nature of operations make it difficult for outside investors to understand the water sector and create uncertainties that at least for the time being tend to discourage joint venture arrangements.
- **The organizational makeup of the water sector is extremely complex.** It includes a large number of local, provincial, and national ministries and legislative bodies whose functional responsibilities are often unclear and frequently overlap, adding to the inevitable confusion of the process of decentralization and the transition to financial autonomy that are still incomplete. Presented with this extensive amount of procedural red tape, prospective investors are unlikely to be enthusiastic.
- **There are a number of organizational issues of concern to prospective investors.** These include the managerial autonomy of PDAMs, the role of supervisory boards, and the extent to which local governments can intervene in the affairs of a PDAM. A related set of concerns arises from the virtual absence of an independent regulatory body that can mediate the conflicting interests of the public and private sectors. This is of particular importance because there is no appeal procedure to a court of law to assert claims or to challenge official decisions.
- **The basic mandate under which PDAMs function may have the effect of discouraging private sector interest.** PDAMs are required to pursue certain social goals on the one hand while achieving financial self-sufficiency on the other. In addition, many local governments expect their PDAMs to be a source of revenue. Achieving the proper balance between these conflicting goals is not easy under the best of circumstances. It requires an enterprise with clear objectives and a high degree of management autonomy.

Figure 2

Organizational Structure for the Regulation of, and the Provision of Assistance to, BPAMs, PDAMs, and PDABs by the Government of Indonesia



Because of the complicated institutional setting in which PDAMs function and the large number of stakeholders, many PDAMs lack effective authority to make decisions and to chart their own course.

- **Vested interest in maintaining PDAM functions within the GOI purview may discourage private sector initiative.** The perceived direction and control of PDAMs by the government make PDAMs eligible for a number of benefits such as donor technical assistance and training, subsidized loans, and grants that would be unavailable if the PDAMs were in the full control of the private sector. Trading these specific benefits for more generalized benefits like greater efficiency may be judged as too elusive or speculative to encourage active interest in formal private sector initiatives. Further, a higher degree of PSP in the water supply sector means less of a role for the functions PDAMs currently perform. Ultimately, if private sector models became the norm, PDAMs would cease to have a technical or financial function and possibly would assume a regulatory or oversight role.
- **PDAMs lack experienced, well-trained professionals who can evaluate the technical and financial soundness of proposed ventures and deal with private sector representatives on an equal footing.** Few PDAMs can afford to support staff training, to provide long-term career planning, or to hire experienced (and expensive) supervisory personnel. The consequence is that PDAMs are at a disadvantage when negotiating with commercial entities, and business firms are disinclined to enter into joint ventures with agencies that lack managerial skill.

Legal Characteristics

There are numerous laws and regulations at the national, provincial, and local levels that will govern PSP in the urban water sector. These include the constitution, laws that define the responsibilities of the water authorities (PDAMs and BPAMs), laws that govern domestic and foreign private sector investment, regulations dealing with taxes and tariffs, and laws and regulations that govern the operation of public utilities.

The most important of these laws and regulations are:

- The Basic Law of 1945, which specifies that water resources are owned by the state and are to be managed and utilized by the government for the maximum benefit of the people.

- Law No. 5 of 1962, which specifies that water authorities are not permitted to cooperate with the private sector if this would undercut their managerial authority.
- Law No. 1 of 1967, which places limitations on foreign investment in the water sector.
- Presidential Decree No. 21 of 1989, which permits private sector investment in water supply.
- Regulation No. 4 of 1986 from the Ministry of Home Affairs, which permits cooperation between regional government bodies and the private sector.

The legal and regulatory framework has several features that will directly influence the level and nature of private sector involvement in urban water supply, some with a positive, others with a negative, effect:

- The laws and regulations regarding PSP in water supply are clear in encouraging such participation, although there are conflicting laws that would appear to restrict that participation in some ways.
- The policies, laws, and regulations regarding decentralization of government, the strengthening of local government, and the financial viability of local water authorities establish a positive climate for increased PSP.
- The GOI has made a deliberate recent effort to open the door to increased PSP in the water sector by removing water from the restricted list (Presidential Decree No. 21 of 1989) and by taking a related series of steps to make the water sector more attractive to private investors.
- The laws and regulations are far less clear in stating on what basis the private sector may participate in the water sector, what standards the GOI will apply in evaluating applications, and how the GOI will ensure that its public policy aims in the water sector are achieved in a manner that will be consistent with the commercial needs of the private sector.
- There are a number of contradictions and inconsistencies in the legal and regulatory framework. Because it is unclear whether these are inadvertent or reflect ambivalence with regard to the wisdom of PSP,

they will tend to discourage private investment unless they are clarified. The most important are summarized in Figure 3 and set out below:

- Apparent limitations on the authority of PDAMs to enter into a joint venture with a private party
 - The apparent inconsistency between the Basic Law of 1945 and private ownership and management of a water utility
 - Apparent limitations on foreign private sector investment in water supply
- Indonesian laws and regulations are sometimes imprecise and their coverage—particularly with regard to commercial activity—tends to be uneven. In some instances the laws may appear to be in conflict, particularly to a foreign investor. Although these inconsistencies permit greater administrative flexibility, they pose difficulties for the private investor who wants predictability and certitude in the legal framework in which he operates.
 - There are several restrictions dealing with domestic borrowing, the ownership of property, the transfer of equity ownership, and the repatriation of capital and profits that affect foreign investment. The GOI is intent on attracting foreign capital, but through these restrictions sends prospective investors a discouraging signal.
 - Because Indonesia has no history of private involvement in public utilities, there are virtually no laws and regulations governing oversight. There is no independent regulatory body operating under clear and consistently applied rules to ensure that private investors receive a reasonable rate of return and that essential public policy goals are pursued.

A regulatory framework is important both to the government and the private investor because it protects the public interest but also provides the investor with a process by which concerns can be addressed and with a known set of standards that will be used in adjudicating disputes.

Figure 3

**Possibly Conflicting Authorities—
Private Sector Participation in
Indonesian Water Supply Activities**

PROHIBITED OR RESTRICTED

Basic Law of 1945, Article 33

Production branches which are important to the State and provide for the needs of the people must be under the control of the State and water is to be managed and utilized by the government for the maximum benefit of the people.

Law No. 5 of 1962

PDAMs (see Article 5) have no authority to cooperate with the private sector if this would relinquish "management" by the PDAM.

Law No. 1 of 1967

Foreign investment may not (see Article 6) "exercise full control" in activities in the drinking water sector, although [see para. (2)] foreign investment in this sector is not absolutely prohibited.

PERMITTED

Presidential Decree No. 21 of 1989

The private sector is permitted to participate in the water supply sector because "water supply" or "drinking water" is not listed as an area from which any form of new private sector investment is excluded.

**Regulation of Minister of Home Affairs
Nos. 4 of 1990 and 3 of 1986**

Permits, inter alia, cooperation of prescribed types between regional enterprises and the private sector.

- These impediments and constraints raise the perceived level of risk for a private investor, who can be expected to seek a higher rate of return before investing capital, particularly equity, in the urban water sector. This, in turn, will increase costs to the consumer.

2.6 Private Sector Participation in Indonesian Urban Water Supply—Experience to Date

The study found two main types of private "off budget" investment in water supply: supply-led source development projects, and "enclave" water supply developments. The first type is initiated by firms with a vested interest in water supply projects from a management, design, or construction base. An example is Umbulan Springs Bulk Water Supply. The second type features water as part of a larger development. Water supply is important but not the principal component. Projects of this type are associated with a tourist center, an industrial estate, or a private housing complex. Lhok Seumawe is an example. (See box below)

The commercial motivation in the case of "enclave" investments has been the profit to be realized from the principal component, to which the provision of water has been subordinate. The amount invested in water resources is a relatively small part of the total investment. "Enclave" investments are important to industrial development and in some instances are linked to high-income housing developments, but do not add significantly to water coverage for large urban populations.

Whether or not the Lhok Seumawe and Umbulan Springs ventures will materialize is still uncertain. In both cases impediments to successful negotiations have centered on the willingness of the government to guarantee a minimum level of consumption; control over rate-making authority; and the balance between the public goal of keeping rates "within the ability of the people to pay" and of subsidizing water costs to the poorest versus the commercial goal of covering costs and making a profit.

The potential for PSP is defined in government guidelines that envision joint public/private participation in water extraction, raw water transmission, clean water production, and clean water distribution. To encourage PSP, the government has sponsored 23 capital investment project identification studies that concentrate on providing capital to increase water supply capacity and distribution for urban areas. They can be categorized as supply-led developments.

Financing of private sector initiatives has come from both international and domestic sources. Table 2 shows current private investment "starts" in water supply by size of investment, source of finance, and type of project, and points up two basic market conditions. International financing is drawn to large-scale projects, both supply-led and enclave, whereas domestic financing is attracted solely to enclave projects.

Examples of Private Sector "Starts" in Urban Water Supply

BOT/Concession

Umbulan Springs, Pasuruan, East Java

This project is primarily the development of bulk water supply for the use of Surabaya City. The project's main component is a 65 km transmission pipeline from the spring to Surabaya. In 1987-1988 a study recommended that bids be requested from the private sector for the development of Umbulan Spring along the lines of a BOT type contract. Several consortia expressed interest and the Bromo Consortium, which included both local and international financing, was finally selected to negotiate for the concession to supply water to Surabaya. The concession agreement includes building the pipeline and operating it for a minimum of 15 years. The project's capital cost is substantial at about US\$ 125 million (1990).

Enclave Development

Lhok Seumawe, Aceh Utara

This project is aimed at increasing the capacity of the water supply system in Lhok Seumawe to service a number of big industries including a paper making facility and a fertilizer factory. The works will include increasing the number of connections, expansion of the transmission and distribution network, and increasing the capacity of the bulk water supply. The water demand usage is estimated at 80 percent industrial and 20 percent domestic. The private sector investor group includes American, Dutch and local partners. The proposed concession period is 30 years. The capital cost of the investment is estimated at US\$ 70 million (1990).

Source: Working Paper A—Private Sector Participation in Selected Urban Services.

Table 2

**Private Investment in Water Supply Projects
by Size of Investment, Source of Finance, and Type of Project**

Size of Investment	International Finance		Domestic Finance	
	Supply-led	Enclave	Supply-led	Enclave
Large-Scale Investment (> \$50 m.)	X	X	O	X
Small-Scale Investment (< \$10 m.)	O	O	?	X

Informal interviews with potential private sector investors, both international and domestic, uncovered mixed feelings toward the business opportunities offered by the urban water sector:

- Investors agreed that the GOI has been successful in stimulating private sector interest in the sector.
- However, they emphasized the importance of an operating environment with clear regulations, consistent administration of procedures, and mechanisms to ensure that agreements are enforced. They believe that urban water supply could offer attractive opportunities, but that present conditions are not favorable.
- Investors stressed the need for a reliable forecast of revenues from which they could calculate a rate of return on their investment. If they are not able to make accurate calculations, they will either shy away from the investment opportunity or demand a higher return to cover a higher perceived risk. Investors interviewed in this study felt that at present the urban water sector offers little predictability.
- In addition to these general reservations, prospective investors had a number of specific concerns centering on:
 - *The role and competence of the PDAM.* Investors raised questions about the division of authority in a joint relationship with a quasi-government entity, the responsibility for setting tariffs, the mechanism to balance the public service objectives of the PDAM and the commercial objectives of the private

sector partner, and the intrusive demands of local political interests. Also, they were uncertain about the managerial competence of PDAMs and whether or not a PDAM can legally become a shareholder in a joint venture company.

- *Availability of long-term financing.* The domestic market for large long-term capital investments is not yet mature. Most domestic investments are under \$10 million, less than what water supply operations generally require. Foreign investors, on the other hand, tend to prefer larger projects in the neighborhood of \$50 million. This suggests that water projects are likely to fall between the smaller projects financed locally and the larger projects favored by foreign investors.
- *Reducing investment risks by the adoption of regulations and the removal of constraints.* Investors would like to see specific inducements from the government, including guarantees on: water consumption and borrowing; the removal of legal and regulatory ambiguities affecting the authority of PDAMs to enter into joint venture arrangements; the conversion of the rupiah; and the repatriation of capital and profit.
- *More information and detailed feasibility studies.* Investors wanted more information about the sector and feasibility studies by an objective third party that would better identify the risks and returns.

2.7 Models for Increasing Private Sector Participation

This study concentrates on ways of tapping private sector capital. Other methods of involving the private sector in urban water supply, listed in Table 1, call for an increase in the stock of human rather than financial capital. They strengthen institutional capacity and lead to long-term budgetary savings through more efficient operations, better revenue collection, a reduction in unaccounted-for water, and an increase in consumption by well-served and satisfied customers. A comprehensive strategy for increasing PSP would need to take all of these into account, using them selectively where warranted.

The BOT approach is currently of primary interest to the GOI. It includes the element of capital formation and the creation of new capital issues (investment) in the water supply sector. The Working Papers provide an exhaustive analysis of this model. Key points are as follows:

- The BOT approach is an effective mechanism for attracting off-budget capital, thereby freeing public resources for alternative and, presumably, more productive investment.
- The BOT approach also offers significant gains in operating efficiencies through the introduction of private sector management and the continuous transfer of new technology.
- The BOT approach is *not* a least-cost option, since revenue flows must cover the higher borrowing costs of the private sector as well as the margin of return to the commercial firm.
- The BOT model is predicated on the premise that cheaper, less risky, on-budget finance is not available. The BOT must bring extra funds or "additionality" to the sector to be justified.
- The ability of a firm to raise debt and equity financing to cover the large investment costs of a BOT arrangement depends on reliable agreements with the purchaser of the bulk water and on strong contractual guarantees that the revenue stream will not be suddenly reduced by unilateral changes in the tariff structure. *These guarantees and understandings are essential to all successful BOT negotiations.* Governments that do not wish to enter into agreements of this sort should avoid BOT-type arrangements.
- The blending of concessional public funds such as World Bank money with private sector capital in order to bring down the effective cost to the investor is a complex mechanism that can be used only with considerable uncertainty. The problem is that it provides an undeserved "sweetener" to the investor while reducing his obligation to bring in extra funds.
- From the investor's perspective, the major concerns associated with a BOT investment are construction delays and cost overruns, cash flow risks particularly during the first years of operation when interest and principal payments are highest, equity risks that arise from the very long payback period and the dangers of altered market conditions, and foreign exchange and inflation risks. All these can be partly or wholly alleviated through agreements with the government and control of tariff schedules.
- From the public's perspective, the major concern is the potential loss of control over important decisions affecting the public welfare when

the management of a public utility is placed in private hands. This is particularly so in the absence of a regulatory policy and framework.

- The current disinclination of the GOI to provide assurances in these risk areas suggests that a BOT arrangement will be extremely difficult to negotiate. (The difficulties in negotiating the Umbulan Springs venture bear this out.)
- BOT arrangements must be commercially viable. Financiers who commit long-term equity must have confidence in the overall commercial structure and in the ability of the new company to generate revenues and provide a competitive rate of return on the investment. There is an understandable but misleading inclination to view a private facility in the water sector as analogous to a public enterprise. A profit-driven BOT is an island in a sea of government facilities operating on a different set of assumptions, including the provision of a social tariff.

3. **IMPLICATIONS FOR DESIGN OF A STRATEGY TO ENCOURAGE INCREASED PRIVATE SECTOR PARTICIPATION IN URBAN WATER SUPPLY**

The analysis and findings set forth in this study have important implications for the design of a strategy to increase private involvement in the urban water sector. These implications are discussed below.

- **The public sector is unable to fully meet the growing demand for potable water.** The continuing growth of urban populations will create a constantly expanding demand for safe drinking water. Institutional and budgetary constraints make it unlikely that the current PDAM structure will be able to meet that demand to the full extent.
- **Private sector funds can help close the gap.** The infusion of private capital can help close the gap between actual and target water coverage rates in urban areas. Nothing in this study has suggested that the concept of seeking private funds to improve urban water service is flawed, provided the constraints and costs are recognized and dealt with.
- **There are obstacles and it will take time.** There are numerous difficulties that must be addressed if efforts to increase private sector involvement in the urban water sector are to be successful. If nothing else, the study makes it abundantly clear that increased involvement of the private sector will not be simple and will not occur overnight.
- **It is important to distinguish between constraints that are repairable and those that are not.** From a decision-making perspective, the constraints on increased private sector participation identified in this study fall into two categories: those that can be eased by corrective action such as clarification of laws, a strengthening of the PDAM framework, and installation of a regulatory system; and those that arise from conflicting interests and thus are much more difficult to change such as the misfit between the investment expectations of the private sector and the basic nature of water supply projects. By far the largest number of obstacles are in the first category.
- **Costs need to be better understood.** The study repeatedly stresses that private sector involvement in the urban water sector will involve significant social and financial costs that need to be

appreciated at the outset. It has identified some of these costs; it has not quantified or prioritized them. The GOI must do that and assess their political implications.

- **Consider private participation as one part of an overall "game plan."** PSP should not be approached as an end in itself but as part of an overall strategic approach to improving urban water supply. The role of the private sector is a subordinate but important element. If private sector involvement is approached in this derivative fashion, a number of the more difficult public policy issues such as those involving rate making and the extent and nature of subsidies will fall into place.

The key to developing a workable policy for private sector involvement is to find the right balance between financial sustainability and social equity. The current policy of keeping water rates low for social equity purposes, while asking PDAMs to function on a full cost recovery basis, is inconsistent with a strategy to increase private participation through the PDAM structure.

- **The basic policy toward private sector involvement should be reviewed.** Because the study has uncovered a number of constraints not previously identified, it may help the GOI to review its basic policy of encouraging PSP in urban water supply. This is not because of any conclusion suggesting that the costs of PSP outweigh benefits. That is a final judgment for the GOI to make. It is because a consensus on fundamental issues across the full spectrum of executive and legislative bodies is necessary.
- **The basic policy should be restated.** Because PSP requires a careful balancing of public goals and private interests and because several applicable laws and regulations are ambiguous or contradictory, the GOI needs to clarify its basic policy. Further, it needs to back up this clarification with modifications in law, regulation, and procedure to remove any lingering doubt about the intent of this policy.
- **Develop a comprehensive plan for private sector participation.** The GOI should develop a comprehensive plan defining the extent and nature of PSP and using it to the best advantage in achieving the strategic goals of the urban water sector. The plan should ensure that private investment supports, not

undermines, efforts to rationalize the financial structure of urban water authorities.

In addition, because of the institutional complexity of the urban water sector, some top-down "roadmapping" will be needed to attract significant private sector capital. This could mean a central facility to prioritize opportunities in the water sector, clarify procedures and regulations, and provide technical assistance during the negotiation process. A facility of this sort is needed particularly for large and complex BOT ventures, even if it is in partial conflict with current decentralization efforts.

- **Broaden the approach.** The study stresses that any strategy for increased PSP should go beyond mechanisms to tap private sector capital and include instruments to improve institutional performance and efficiency. This is particularly important in Indonesia, where the PDAMs face considerable institutional challenges that inhibit private investment.

In this vein, PSP should be conceived as a strategy to support GOI decentralization efforts, strengthen the capacities of local governments, and help them achieve financial stability. This important objective should be woven into the policy to increase PSP.

- **Place a high priority on designing a regulatory framework.** It is abundantly clear from the findings of this study that a regulatory structure and process must be in place before extensive PSP can occur. The absence of a regulatory framework is likely to slow down the entry of private investors and significantly reduce the benefits of PSP. Without a mechanism to resolve conflicts, disagreements tend to escalate and take on political significance.
- **Make private sector participation more attractive.** If large amounts of private capital are to be invested in the urban water sector, the GOI will have to take a number of steps to make investment more attractive. These will include institutional, financial, legal, and regulatory changes. Some of these reforms, such as a strengthening of the PDAM structure, need to be undertaken for their own sake regardless of subsequent private sector involvement. Others, such as the willingness to provide bulk water sales guarantees, are directly linked to attracting private sector capital.

- **Address the issue of guarantees.** In the financial area, the GOI needs to provide two guarantees. The first is on the rate that will be paid for delivered water, the second is on the quantity of water that will be purchased. The rate guarantee will necessitate a definition of where the authority to make rate changes resides, the process for making rate changes, and the price of water that would adequately compensate a private sector investor. The second guarantee requires improving the planning and forecasting capacity of the PDAMs.
- **Address the issue of the PDAMs.** There are three aspects of PDAM operations that require attention if successful joint ventures are to materialize: confirmation of the authority of the PDAMs to enter into contractual relationships with private entities; the extent to which local governments can intervene to alter the content of a PDAM/private sector partnership; and the overall managerial competence of the PDAMs.
- **Develop a policy for "enclave" investment that ensures these initiatives are compatible with overall water sector strategy.** Involving the private sector in providing water to industrial estates, tourist facilities, private housing developments, and other "enclaves" that operate outside the PDAM structure is a useful strategy for tapping private capital to cover some of the costs of water exploitation and transmission.

But there are two concerns. The first is that "enclave" developments may withdraw from the PDAM's jurisdiction higher-income groups able to cover the full costs of the water they consume as well as support a cross-subsidization policy. The second is that small "enclave" developments may prevent the future introduction of larger economies of scale by segregating the market into less than optimal subunits. Both concerns underscore the importance of an overall urban water sector strategy and a set of policies that flow from it.

4. NEXT STEPS: WHAT SHOULD THE GOI DO TO INCREASE PRIVATE SECTOR PARTICIPATION IN THE URBAN WATER SECTOR?

The study was designed to assess the prospects for increased PSP in urban water supply and to recommend a strategy for it. The central conclusion is that PSP is feasible and desirable only if steps are taken to make the sector more attractive to prospective investors by removing or modifying the constraints identified and establishing a regulatory framework and related policies to protect the public interest.

Recommendations for increasing private sector participation follow. Because this objective requires difficult policy choices that only the GOI can make, the emphasis is on the *decision-making process*, not on the content of specific decisions.

Revalidate the Basic Policy

The GOI should review the contradictions, constraints, and policies discussed in this paper (Volume I) and the Working Papers (A to F) to revalidate its policy of encouraging private sector participation in urban water supply. To be most useful, the review should consider five difficult issues :

- The willingness of the GOI to modify various laws and regulations to facilitate private sector involvement
- The extent to which the GOI in its negotiations with prospective investors is willing to provide price and quantity guarantees
- The role of local government and the need for assurances that local governments will not intervene unilaterally
- The location of rate-making authority and the extent to which tariffs can be raised to ensure a profitable return to the private sector partner
- The role, location, and composition of a regulatory authority

We recommend that this revalidation proceed from the perspective of the total strategic needs of the urban water sector and that private sector participation be approached as one of a variety of instruments that can be employed by the GOI to reach its goals.

The revalidation needs to be carefully organized to include key officials or their representatives from the ministries involved and representatives from the private sector. It is recommended that a workshop for this purpose be held in the first half of 1991.

Restate the Basic Policy

The GOI should restate its policy on PSP, dealing directly with the five issues listed above and providing broad guidance at all levels of government regarding its intent and the steps it plans to take. The GOI may also want to consider a range of policies that reflect current market conditions and capitalize on current market opportunities. For example, large internationally financed BOT projects might warrant special legislation on ownership and rate-setting mechanisms that would not apply to smaller systems and domestic financing. Similarly, legislative and financial packages covering combined developments might be appropriate for "enclave" projects, which include investment interests outside the water sector.

Address the Constraints and Devise Solutions

The GOI should consider the seven major recommendations that follow:

1. Changes in laws and regulations to remove ambiguities and inconsistencies that discourage private sector investment
2. The types of guarantees prospective investors should and should not be given to encourage participation in the urban water sector
3. Local government assurances to prospective investors against unilateral intervention that at the same time preserve the authority of local government and legislative bodies
4. Definition of the authority and process for adjusting water tariffs so that the public interest in social equity and the private investor's interest in revenue protection are held in balance
5. The establishment of a regulatory structure that would define authority, the relationship between the investor and various local government bodies, and the review and approval process so as to safeguard both the public and private interests
6. A PSP plan that would establish the types of projects in which investment is encouraged; the standards of coverage and quality assurance to be met; the technical standards that are expected; and an organizational roadmap to assist the private sector in its search for profitable investment opportunities

This plan would outline: a policy for encouraging "enclave" developments in a manner consistent with other policy goals such as the financial viability of the PDAM structure and the maintenance of

economies of scale in water supply; and a policy for BOT developments—mainly large projects such as bulk water supply or treatment suited to international market conditions for size of investment—that clarifies the terms acceptable to the GOI.

7. A review of measures to strengthen the institutional capacity of the PDAMs to ensure they are placed on an equal footing with private sector partners

Table 3 presents the seven major recommendations across a range of considerations that reflect the major policy implications of the study. It identifies the technical category of each recommendation and indicates the impact of each recommendation on the international and domestic investor. A number of these recommendations came from interviews with private investors, and implementing them would have a high impact and subsequently a high priority. The timeframe estimates the elapsed time (1 to 3 years or over 3 years) it would take to implement the recommendations, based on existing mechanisms that could be used or on new ones to be created.

Most of the recommendations require an integrated approach. Legislative reform to provide incentives, e.g., tax holidays, would be fairly straightforward. More difficult would be the changing of existing practices that protect vested interests within the sector. The most controversial recommendations probably will be to create an independent arbitrating authority outside the ministerial framework and to invest interests outside the water supply sector with financial control and tariff setting more suitable to private sector endeavors.

One final recommendation is that the GOI should consider models of PSP in the urban water sector (such as management and service contracts) that involve the transfer of human rather than financial capital. Although these may not be as dramatic as large-scale investment projects, they can achieve significant long-term budgetary savings by improving managerial efficiency and may be an important factor in attracting future private capital.

Table 3

Consideration of Major Study Recommendations: Policy Matrix

Study Recommendations	Specialist Category	Impact		Timeframe	Package/ Stand Alone	Difficulty	Priority
		Int'l	Domestic				
1. Inconsistencies in Existing Legislation	Legal	High	Low	Med.	S.A.	Low	Med
2. Financial Guarantees and Incentives	Financial	High	High	Med.	S.A.	High	High
3. Autonomy of Operation	Legal & Policy	High	High	Long	Package	High	High
4. Tariff Policy: Equity vs. Viability	Financial & Policy	High	High	Med.	Package	High	High
5. Establishment of an Independent Regulatory Authority	Legal, Fin., & Policy	High	?	Long	Package	High	?
6. Private Sector Participation Plan: (i) enclave (ii) BOT	Policy	High	High	Med.	Package	Med.	High
7. Institutional Strengthening of PDAMs	Policy	Low	Low	Long	Package	High	Low
Key:	Timeframe:	Med.	1-3 years				
		Long	Over 3 years				