PRIVATIZATION OF THE WATER-SUPPLY INDUSTRY IN INDONESIA

by

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ABBREVIATIONS

BAPEDAL	Environmental Impact Controlling Agency
BAPPENAS	National Development Planning Agency
BPAM	Drinking Water Management Board
BPCK	Directorate of Program Development
DATI I	First Level of Government/Provincial Level
DATI II	Second Level of Government/Local Level
DIP	Project Development Grants
INPRES	Presidential Instruction Grants
IUIDP	Integrated Urban Infrastructure Development Program
JVC	Joint Venture Company
MHA	Ministry of Home Affairs
MOH	Ministry of Health
MPW	Ministry of Public Works
OECF	Overseas Economic Cooperation Fund
PDAB	Provincial Water Enterprise
PDAM	Local Water Enterprise
PERPAMSI	Association of Local Water Enterprise
REPELITA	Five-Year Development Plan
SAUR	Société d'Aménagement Urbain et Rural
SODECI	Société de Distribution d'Eau de la Côte d'Ivoire
WSPLC	Water-Supply Public Limited Companies

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ABSTRACT

The government of Indonesia had to reduce its development budget in 1986, and many sectors, including infrastructure services, were seriously affected. Many government officials believed that the government will no longer be able to provide the services without private-sector participation. Due to its financial difficulties, the government invited the private sector to participate in the provision of water for Surabaya and its surrounding cities. Officials in Surabaya started the project in 1988 and are presently conducting negotiations concerning it, but, at present, they have not yet started to implement it.

The experience of privatizing the water-supply industry in some industrial and developing countries shows that an adequate regulatory framework and an effective regulatory institution are essential to create a competitive environment in a market characterized by a natural monopoly. Regulations and competition are necessary to achieve the privatization goals and public-welfare objectives.

The Indonesian experience in privatizing its water services confirms that without an appropriate regulatory framework to guide the implementation of a privatization program, there is a tendency for the private monopoly to exploit the market. To ensure that the privatization program in the water-supply industry is successful, there should be specific guidelines for technical requirements, an accounting system, environmental safety measures, price determination, a legal procedure, and contractual arrangements.

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CHAPTER 1

INTRODUCTION

The provision of drinking water-supply services in Indonesia has been shared mostly by the central government and local governments. The central government provides drinking-water directly in both rural and urban areas, through the Ministry of Public Works (MPW), where water enterprises have not yet been established, while local governments provide the service through the operation of water enterprises.[1] At this moment, water enterprises exist in both large and secondary cities where there are adequate resources and demand.

In its Fifth Five-Year Development Plan (Rencana Pembangunan Lima Tahun V, or REPELITA V), from the fiscal year of 1988/89 through 1993/94, the government of Indonesia determined that all urban areas that are already operating water enterprises must serve at least 80% of their population by 1994. To achieve this target, these city governments have to be able to mobilize a substantial amount of financial resources through grants, borrowing, or private-sector participation. The last option may take the form of full privatization (in water treatment, distribution, and fee collection), or public-private partnerships. Central-government grants will still be provided to cities in developing provinces.

Privatization is becoming more popular in many countries, especially industrial countries. International agencies and some industrial countries, through their bilateral

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[1] Water enterprise is defined as a company, owned by a local government, that provides drinking-water to a local community.

development agencies, keep promoting privatization all around the world. In Indonesia, privatization is viewed as being a breakthrough for the country's infrastructure development policies. Some ministries and business people are in favor of extending privatization to the provision of traditional public services, such as water supply, telecommunication, electricity, transportation, and solid-waste management. This thesis is about the experience of the Indonesian government in implementing its privatization policy for the water-supply industry, and it includes an evaluation of the conditions required to conduct the policy under an inadequate regulatory framework.

Need for Private-Sector Participation

Infrastructure development is still one of the most important policies for the Indonesian government. Rapid economic and population growth create a high demand for infrastructure services, and in many Indonesian cities, the demand exceeds the supply of such services. Consistent with the government's policy, infrastructure expenditure is the largest expenditure in the national budget, and it grows substantially each fiscal year. The central government's financial situation, however, is limited. The government has adopted a balanced-budget policy since 1966. Historically, the most important source of the central government's revenues was from oil and gas exports. In 1986, the government's financial situation deteriorated, because world oil prices fell sharply, and the sources of revenues in Indonesia from other sectors were very limited. The 1986/1987 national budget was a no-growth budget, which meant that development expenditures had to be reduced by 12% in real terms. The expenditures for infrastructure development were among the most seriously affected (Sumadi, 1986).

The main economic development policy since 1986 has been to stabilize the exchange rate by expanding the government's sources of revenues and postponing many governmental mega projects.[2] Project postponement occurred in all sectors. In the meantime, a strong belief developed among some government ministries that the central government could no longer provide infrastructure services by itself, despite its effort to increase revenues.

An obvious example of the central government's inability to provide infrastructure services is in the water-supply industry. The provision of urban and rural drinking-water supply has been an important infrastructure development program of the Indonesian government since 1969, the commencement of REPELITA I.[3] Substantial investments in water-supply services have been made. In REPELITA III, local water enterprises (Perusahaan Daerah Air Minum, or PDAM) and drinking-water management boards' (Badan Pengelola Air Minum, or BPAM) coverage in urban areas was only 23% of the total population, among the lowest in Asia (World Bank, 1991). By the end of REPELITA IV (1988), the PDAM and BPAM's services were targeted to cover 75% of the 45 million urban population. Despite the set target and all the investments that have been executed, the number of people who do not have adequate safe water in

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[2] Three major actions taken by the government were: (1) promoting exports from sectors other than oil and gas, (2) tax reform, and (3) promoting private participation in public-sector activities.

[3] When the new-order regime took over the government from the previous regime, it started to establish a long-term economic plan called Long-Term Development Plan I (Rencana Pembangunan Jangka Panjang I), which consists of five REPELITAs. The first REPELITA was started in 1969.

urban areas increased from 18 million in 1980 to 27 million in 1990, representing 55% of the total urban population (Sidabutar, 1992).

Private-Sector Participation as a National Policy

Given the problem of the government's inability to provide adequate infrastructure services, especially in urban areas, the Chairman of the National Development Planning Agency (Badan Perencanaan Pembangunan Nasional, or BAPPENAS) issued the National Urban Policy Statement in 1987, whose policy objective was to decentralize the provision of urban infrastructure services.[4] In summary, it states that the local governments will be responsible for (a) planning and programming of their urban infrastructure services; (b) mobilizing financial resources to finance their urban-development programs; (c) strengthening their institutional capacities in order to implement their urban-development programs, with assistance from the central and provincial governments. Currently, the National Urban Policy Statement is implemented through the nation-wide, urban-development program called the Integrated Urban Infrastructure Development Program (IUIDP). An important aspect of this program is to promote the private-sector participation in urban infrastructure development.

The importance of private-sector participation is clearly stated in the REPELITA V as well. Of the total investment funds needed during the fiscal year 1988/89-1992/93, 55% were expected to come from the private sector. For provincial

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[4] Chairman of BAPPENAS Decree No. 016/Kep/4/1987, about the Coordination Team for Urban Development.

governments, this is an opportunity to invite the private sector to augment their provincial economic-development programs, including the infrastructure services. In the following section and the rest of the thesis, I will be focusing on the Indonesian experience in promoting private-sector participation in the water-supply services.

History of the Water-Supply Industry in Indonesia

Prior to 1988, the MPW and the Ministry of Health (MOH) were responsible for drinking-water services, at the central government level. The fund for this service is allocated by BAPPENAS through project development grants (Daftar Isian Proyek, or DIP) and the Presidential Instruction (Instruksi Presiden, or INPRES) fund for health services.[5] The DIP is administered by the MPW, while the INPRES is managed by the MOH. The geographical allocation of these funds is also different. MPW's DIP is used to finance drinking-water services in urban areas, while the INPRES is for rural areas. The lack of technical expertise within the MOH caused program failures, and since 1985, the MPW has provided the capital investment and technical supervision for INPRES as well, while the MOH retains its role in water-quality control.

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[5] DIP and INPRES funds are both central government expenditures. The difference is that INPRES funds are treated as revenue sources for the provincial and local governments. These funds, which are specific grants, are intended to provide incentives for the provincial and local governments. There are 8 kinds of INPRES funds for various purposes : health services, local markets, provincial government development programs (INPRES Daerah Tingkat I, or INPRES DATI I), local government development programs (INPRES Daerah Tingkat II, or INPRES DATI II), provincial roads, district roads, and reforestation. For the purpose of this thesis, the health services grant will be referred to as INPRES.

Starting in 1988, the agency division between urban and rural areas was abandoned. From that time on, the institutional approach has been to integrate the execution of water and sanitation projects in rural and urban areas under ministries responsible for specific action. Under this approach, the MOH is responsible for community participation and water-quality control; the Ministry of Home Affairs (MHA) for institutional development; and the MPW for capital investment and technical assistance (World Bank, 1991).

The institutional arrangements of water-supply services in urban areas take a different form. Initially, the MPW creates a drinking-water management board, called BPAM. BPAM generally starts its service by providing a piped-water system and standpipes. Within five years, the BPAM is supposed to meet certain performance criteria, so that it can be transferred to the city government for operation as a water enterprise. By the time the BPAM is transferred to the local government, the legal status of the BPAM is changed from a central government's unit to a local government water enterprise called Perusahaan Daerah Air Minum (PDAM). This is the normal institutional arrangement used by the government to provide drinking-water services. In a special case, such as in the province of East Java where the provincial government has to have a representative in public-private partnership, the provincial government may create a provincial water enterprise (Perusahaan Daerah Air Bersih, or PDAB). The PDAB was established as a realization of the central government's private-sector participation policy in the provision of urban infrastructure services.

Reasons for Privatizing the Water-Supply Industry

The government's two main reasons for promoting private involvement in public services, especially the water-supply, are:

1. To tap private financial resources, because it is difficult for the government to finance all development projects required to sustain the current economic growth. This policy relieves the government's financial burden, and the government development funds can be allocated for other purposes.
2. To attain operating efficiency, because one of the IUIDP's goals is to promote private-sector involvement in urban development. The private sector is expected to bring innovative management which will bring greater productive efficiency than is currently realized with public provision.

Thiemeyer categorized fifteen different kinds of privatization experienced in many different countries (Ramanadham, 1989: Appendix 1). In this analysis, I will limit the discussion to full privatization, in terms of full private funding, and public-private partnership, because these are the most popular forms adopted by the water-supply industry.[6] In some cases, as experienced in the British water-supply industry, full privatization--in terms of selling off public assets--is adopted. Suselo and Taylor (1992) argue that selling off local water enterprises in Indonesia, is very unlikely to be realized at the moment, because of two reasons: (a) it may create a conflict with

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[6] The full privatization form has been adapted to small-scale water-supply systems for industrial purposes, such as in the cities of Tembagapura, Bontang and Soroako, where the mining companies developed the water-treatment plant and its distribution network, and in a new privately built town of Bumi Serpong Damai.

existing legislation, which places responsibility for public water-supply with the government; and (b) it involves socially sensitive issues and would have to include very carefully considered safeguards for the urban poor.

The first reason is closely related to the government regulation that, if the assets are valuable, prohibits the government from selling its assets to achieve public-welfare objectives, while the second one is related to the nature of the industry. In many cases the water-supply industry has a characteristic of a natural monopoly. If full privatization were to be awarded to a private firm, the government is afraid that the private firm would charge a monopoly price. A water-supply system may not necessarily be a monopoly industry, if one area can be supplied by different water resources, but if water is distributed by a piped system from a single source, the economies of scale are so great that it becomes a natural monopoly (Roth, 1987: 236). Full privatization of the water-supply system, in particular, and utilities industries, in general, is very attractive to the private sector, because if they gain the exclusive right to operate the business in the designated area, there is an opportunity to earn a high return. Conversely, the private sector is often unwilling to make the very high fixed-cost investment necessary for water distribution network. Public-private partnerships seem to be the most acceptable option to encourage private-sector involvement for the time being, because the public sector has the expertise required to operate the water-supply system in Indonesia, while the private-sector has the advantage in mobilizing their financial resources.

Issues of Water-Supply Privatization in Indonesia

Public-private partnership in the water-supply industry in Indonesia, has been promoted recently. However, some difficulties in promoting the private-sector participation have occurred. One important reason is the lack of regulations in the industry. Hanke and Walters (1987) suggested that a strict regulation regarding the privatization of the water utilities is needed so that there is a balance between performing the social function, which is to provide public goods/services to all people at an affordable price, and being able to earn a profit. Privatization of the industry may create a serious exploitation of the market, and the social function of public utilities may be sacrificed if there are no clear guidelines to operate the businesses.

In Indonesia, the rules and regulations of the water-supply industry are inadequate, and are limited to public enterprises. There even remain serious problems with the regulation of PDAM and BPAM. The lack of regulations' enforcement is a major problem with privatization. Too much political intervention in the process benefits the private-sector interests at the expense of the public sector and the consumers. It takes a strong institution and influential officials to make certain that the regulations are properly enforced; however, privatization of water-supply services in Indonesia cannot be avoided. It will be promoted further because of the government's urban development policy. In order to the execute this policy, we need to answer three questions : (1) How do we privatize the water utility?; (2) What regulations do we need in order to ensure that the objectives of privatization can be achieved?; and (3) How should we arrange the regulatory institutions to make the regulations effective?

To answer these questions, I will evaluate the existing regulatory framework for privatizing the water-supply industry, to examine an on-going case of the Umbulan Spring Water Project, and to discuss the role of the institutions involved in the privatization process. The Umbulan Project is the first case of water-supply privatization in Indonesia, so that it is very important to learn a lesson from the project's experience.

This public-private partnership project will eventually use spring water in Umbulan, a village located about 80 kilometers south of Surabaya, which is the capital of East Java and one of Indonesia's largest cities. The spring will be able to provide a water-treatment plant of up to 5.2 cubic meters per second (m^3/sec.), and the project will serve the water needs in Sidoarjo, Gresik, Pasuruan, and Surabaya. The project will not distribute the treated water directly to customers but to water enterprises in those four cities through the PDAB. The distribution to the final users has to be done by the PDAMs because of the large-scale economies. Currently, the PDAMs in Sidoarjo, Pasuruan, and Gresik are constructing an expanded distribution scheme under the World Bank sponsored East Java and Bali Urban Development Project, while for Surabaya, another expanded scheme and rehabilitation of the existing network are being proposed to the World Bank under the Surabaya Urban Development Project I.

As I described earlier, the government's development budget was reduced by 12% in 1986, and the Umbulan Project was the first project in the water-supply industry to be affected by the reduction. At the same time, however, the demand for additional water services in Sidoarjo, Gresik, Pasuruan, and, especially, Surabaya is so high that

the provision of water could no longer be postponed. The preparation of the Umbulan Project was started in 1988 after the MPW had decided to invite private investors to be involved in the provision of water-supply services. Project negotiations have been conducted since then, and they have become a lengthy process with no clear indication of when the project will be implemented. The uncertainties of the project are related to the goals of the public and private sectors. On the one hand, the provincial government is concerned with maintaining the social function of the water utility, namely, providing the goods at an affordable price, but, on the other hand, the private sector is concerned with maximizing its profit and earning a relatively quick return. In addition, there is an indication that the private sector will exploit the unregulated market of the water-supply industry.

Given the fact that there is no reference to existing regulations during project preparation, I will show that there is an inadequate regulatory framework for negotiating and providing water-supply services and a lack of regulation enforcement in the industry. Experience in some countries suggests that before privatization is undertaken for public utilities, a regulatory framework and institutions must be developed in advance. The absence of such a framework in Indonesia suggests that the benefits of privatization are unlikely to be realized and that clearly specified contracts defining output and other criteria are very unlikely to be developed. Also, even if such contracts did exist, the government's monitoring capacity might be inadequate. Finally, the absence of competitive bidding will not guarantee that private production will be more efficient, and it tends to discourage the realization of public welfare goals.

Thesis Outline

The purpose of this thesis is to examine the conditions necessary to privatize drinking-water provision in Indonesia in a way that meets public goals. In Chapter 1, I have explained the history of the water-supply industry in Indonesia and the reasons to promote the private-sector in this industry and have given a brief overview of the Umbulan Spring Water Project and some issues of concern that arise from it. In Chapter 2, I will provide a comparative analysis of privatization of water provision in industrial and developing countries, focusing on public-private partnerships and full privatization, rules and regulations, and the institutional arrangements. I will argue that a regulatory framework is needed before privatization of water-supply services can be undertaken. In Chapter 3, I will conduct a case study of the Umbulan Project in Indonesia, providing some arguments of the project's arrangement that may preclude the intended goals of privatization. In Chapter 4, the final chapter, I will provide some lessons from the Indonesian case for privatization of the water-supply industry in Indonesia and other countries. I will also include suggestions regarding appropriate options for private-sector participation in Indonesia.

CHAPTER 2

COMPETITION AND REGULATION

The Indonesian Constitution (Undang-Undang Dasar 1945) declares that all natural resources that are valuable for human welfare are to be controlled and regulated by the government. It implies that the exploitation of water resources can be conducted by anybody, but is controlled by the government. Some government officials and politicians argue that natural resources should be strictly controlled and exploited by government entities only, because of the existence of externalities and the characteristics of public goods. They believe that private-sector monopoly for public-utility services should be avoided, because the private sector has a profit-seeking motive and tends to turn natural resources--as public goods--into private goods.

Natural resources should be exploited and managed in a way so that all people, especially the poor, are able to consume them at an affordable price. Hanke (1984) explains that this perspective arises because there is a confusion between providing and financing public goods. He further suggests that to sort out the solutions to the alleged problems of externalities and public goods, policy makers must realize that goods can be supplied by either public or private enterprises, and that this supply can be financed by either public-user fees and taxes or private charges (Hanke, 1984: 15). By combining these alternatives, the problems of productive efficiency and public-welfare objectives can be attained. The question is how do we achieve these objectives, especially in a water-supply industry characterized by a natural monopoly market?

To answer this question, I will evaluate the experience of water-supply privatization in the United States, England, France, and Côte d'Ivoire, which have implemented their privatization program for the water utilities. My analysis will be focused on some issues that those countries have experienced, which include: (a) the necessary competitive environment to be created in a privatization program; (b) forms of privatization in a water-supply industry; (c) the regulations needed for water-supply privatization; and (d) the institutional arrangements.

Need for Competition

In the utility industries, a monopoly market takes on a more distinct form than under perfect competition. Veljanovski explains that the prospect of direct competition between firms in the basic utility industries, such as gas, water, electricity, and parts of the telecommunications industry, is limited by the technology of transmission networks. All these industries have a monopoly element, which will not be completely taken away even in the most permissive market system, nor would new entry be profitable other than in the short term. This is because the transmission networks of the gas, electricity, water, and, to a much lesser extent, the telecommunications industries are "natural" monopolies (Veljanovski, 1989).

Furthermore, he mentions that a natural monopoly was defined by economists as an industry where economies of scale existed throughout the range of the demand that was forthcoming at different prices. Recent economic researchers have redefined the concept as a situation where it is cheaper for one firm to supply the market than for two or more firms to produce the same quantity of goods (Veljanovski, 1989: 37).

Finding that utility industries are natural monopolies, analysts indicate that competition is difficult to create within the market. There are three ways in which competition may be introduced in this market:

1. **Contestability.** Baumol, Panzar, and Willig (1982) argue that in a contestable market, both entry and exit must occur in a free and frictionless manner. A firm may choose to enter a market and compete at whichever price it wishes. If it leaves the market, it can recover the full value of its assets and sell the assets or take them to another market, so that there are no sunk costs associated with its entry into a market. If a number of firms with identical technologies are contemplating entry into a market that is a natural monopoly, the absence of sunk costs will lead to normal returns on investment (Nowotny, Smith, and Trebing, 1989). This situation may occur because these firms produce the output without considerable investment costs. Their output, in this particular monopoly market, is an outcome of their relatively large-scale operations.

2. **Chamberlinian Monopolistic Competition.** Here, Chamberlin (1962) gives an example of his concept in the transportation industry. Strong intermodal competition among air carriers, railroads, pipelines, and water carriers, which compete for freight traffic, has been cited as a basis for deregulation of freight transportation, even if one or more of the transportation modes appear to have a natural-monopoly structure (Nowotny, Smith, and Trebing, 1989). Such competition works as a result of the government's deregulation policy. The experience of the American airline industry shows that, following the airline

deregulation, there were increased productivity, reduced wages of airline employees, widened consumers' choices, and lower air fares. The industry, however, is characterized by a high sensitivity of profit to demand, because of the high fixed costs of operating a fleet of aircraft and uncertainties in demand and operational costs. The competition has led to merger activity and has caused an increase in concentration, with the six largest airlines increasing their market share from 73% in 1978 to 84% in 1986. An oligopoly has started to be established, and airfares have started to increase (Vickers and Yarrow, 1988).

3. **Demsetz Competition.** Demsetz (1968) noted that competition may be introduced even in a natural monopoly market, just by establishing a franchise and then requiring competition for the right to serve the franchise.[1] By doing this, he argued, that a public enterprise and its accompanying inefficiency could be avoided, as well as the wastes and inefficiency of a natural monopoly. Instead, the benefits of free, unregulated, and competitive private enterprise could be obtained (Hanke, 1984: 17). Hanke explains further, that to obtain the desired result of free competition and cost-effectiveness of private supply, Demsetz's system requires that the franchise be awarded to the producer who will provide the lowest output price. This price needs to be specified explicitly in the contract. In other words, the public authority that established the franchise would not receive payment from a successful franchise. Rather, the

[1] Demsetz presupposes that public enterprises are inefficient, or, at least, more inefficient that private enterprises.

public authority would act as a bargaining agent for customers in the franchise area. The public authority would have, as its objective, to award the franchise to the private firm that would supply a given quality and quantity of service over the franchise's life at the lowest price. The firm that won the bidding for the franchise would then have a contract with the franchisor, who represented the consumers in the franchise area. The natural monopoly problem would therefore be solved without recourse to a public enterprise (Hanke, 1984: 17-18).

Demsetz competition works well in a situation where the following requirements occur: (a) the quality and the price of output are clearly specified; (b) the technology to produce the output is relatively simple; (c) the future development of the demand for water and its production costs are fairly predictable; (d) no particular informational advantages of the incumbent or some particular bidders are expected; and (e) the cost of collusion among bidding rivals must be prohibitively high, so that competitive bidding is, in fact, the outcome of the bidding process (Hanke, 1984; Nowotny, Smith, and Trebing, 1989; and Bös, 1991).

The experience in the United States, England, France and Côte d'Ivoire suggests that it is important to create competition before a privatization program is implemented, no matter what form of privatization is adopted by the government. The experience in the United States and England represents how full privatization is conducted under a regulatory framework, which makes their model a possible alternative for the Indonesian water-utility industry in the future. Those in France and Côte d'Ivoire are similar to a program being negotiated in Indonesia.

Need for Regulations

In the above discussion, I explained why we need competition and that the competition can be introduced into a market characterized by natural monopoly. With competition, the concept of providing public services by the public enterprise is somewhat reoriented not toward competition under private ownership, but toward private monopoly operation under public regulation (Pryke, 1982).

Donahue (1989) argues that because utilities are local monopolies, the monopolies tend to charge too much and produce too little, if the industries are not regulated. Regulation is needed to ensure competition in a natural monopoly market.[2] Competition may lead to productive efficiency, i.e., the efficiency of a market in producing current products at the lowest cost in the long term, using existing technology (Pass, Lowes, Davies, and Kronish, 1991). When productive efficiency is supposed to be accomplished in a natural monopoly market, however, it is likely that efficiency in the allocation of resources will not be achieved because of the incentives to raise and maintain prices above costs. The experience in England shows that regulation has been proposed as a means of securing the optimal allocation of resources and pricing policy (Domberger, 1985). Regulations should, therefore, be seen not as a substitute for competition, but as a supplement to competition (Vickers and Yarrow, 1988).

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[2] Kaysen and Turner noted that regulations should be introduced when: (1) competition cannot exist or survive for long, and, therefore, an unregulated market will not produce competitive results; (2) active competition exists but does not produce competitive results because of market imperfections; and/or (3) competition exists and has produced competitive results, but is unsatisfactory because of policy interventions (Phillips, 1988: 44).

Kikeri, Nellis, and Shirley (1992) mention that regulations must be formulated clearly to cover the potential legal issues before privatization is implemented, during implementation, and after privatization is completed. At the pre-privatization period, regulations may be passed to deregulate certain sectors, e.g. the trade and transportation, so that the flow of goods and capital, which was previously restricted and took a longer time to deliver, is easier; abolish monopolies in order to promote private-sector involvement; strengthen capital and financial markets so that public and private firms are able to invest more in public services; and authorize public enterprises to prepare the privatization process themselves, especially in the transfer of assets ownership.

During implementation, all parties should have clear guidance in negotiating all aspects of the project and help in establishing the agreements, i.e., risk-sharing, solving disputes, standard performance, and pricing of the output. It is very important that these aspects are specified before the privatization is implemented, because, in such a program, the ultimate goal is to provide "public" goods and services to all consumers at a price that reflects the social cost and benefits. Unclear specification of these aspects may create a lengthy negotiation process, unfair contractual arrangements, and excessive profits, which tend to sacrifice the attainment of public-welfare objectives.

Finally, after a privatization project is completed, there should be clear specifications, so that all parties comply with the terms of the privatization agreements. The regulatory framework may need to be fine-tuned to ensure that it is allowing private enterprise to develop while protecting the legitimate interests of consumers and competitors (Kikeri, Nellis, and Shirley, 1992: 41).

It is very clear that a regulatory framework in the privatization of public utilities, including water supply, is a basic requirement. An examination of the regulatory institutions necessary to privatize the water-utility industry in the United States, England, France, and Côte d'Ivoire will be presented in the following section.

Regulatory Institutions

The United States and France provide examples of a water-supply industry regulated by local governments. In the United States, being one of the most decentralized governmental systems in the world, the water-supply industry is not a federal government service. Until 1976, 46% of 34,631 water systems were owned by the private sector. The industry, however, is regulated by different institutions at the federal, state, and local levels. Some private water systems are controlled by state commissions, while most of the public systems are regulated at the local level, i.e., by city councils, water commissions, etc. (Phillips, 1989).

In France, the government denationalized its water-supply industry by introducing privatization into the industry more than a hundred years ago. In 1882, the government awarded the first franchise contract for water-distribution rights in Paris to the Perrier brothers for a 15-year period. Today, about 55 percent of France's drinking water is supplied by private companies, which mostly takes the form of concessions (Veljanovski, 1989: 49; Roth, 1987).[3]

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[3] Veljanovski (1989) defines a concession as an arrangement where the private company constructs the facilities with its own capital and maintains and operates the system.

In the United States, daily operations of the water systems have to follow state and local regulations. The same legal mechanism occurs in France. In 1981, when the socialist party came to power, the government introduced a nationalization program, which affected all utilities industries, except the water utility. In fact, it was the mayors, regardless of their political party affiliation, who argued that nationalizing the industry would sacrifice the cost-efficiency the industry had achieved (Hanke 1984: 20).

In the United States, there is no special institution established for the water-supply industry. The federal government, however, has established some regulatory institutions related to all utility industries. They are: (1) the Nuclear Regulatory Commission, to regulate the construction and licensing of nuclear power facilities; (2) the Federal Energy Regulatory Commission, to regulate power projects on navigable rivers, the transmission and sale of electric energy and, natural gas in interstate commerce; (3) the Federal Communications Commission, to regulate radio and television broadcasting, and interstate and foreign telephone and telegraph services; and (4) the Securities Exchange Commission, to regulate the conditions of sale of new securities, and some practices of the stock exchanges; later on, the commission was given power to regulate the finances and corporate structures of electric and gas utility holding companies (Phillips, 1989: 133-134).

New organizations outside the traditional regulatory commissions were created at all levels of governments to deal with many of the public concerns or to represent consumers. At the federal level, they are the National Regulatory Research Institute, the Environmental Protection Agency, the Consumer Product Safety Commission, the

Occupational Safety and Health Administration, the Mine Safety and Health Administration, and the Department of Energy. At the state level, they include air and water-control or pollution boards, consumer protection agencies, and energy departments (Phillips, 1989: 18).

The institutional arrangements of the water-privatization experience in England are somewhat different from those in the United States and France. Prior to 1973, the water-supply industry in England and Wales was dominated by three categories of organization: (1) water authorities,[4] (2) sewerage and sewage disposal authorities, and (3) river authorities. Through a consolidation process, the number of water authorities was reduced from more than 1000 to only 198, of which 64 were run by individual local government authorities, 101 by joint boards comprising more than one local government authority, and 33 by statutory privately-owned water companies.

In 1973, the British government reorganized the water-supply industries by forming ten water authorities according to each administrative boundary. The principal aim was to achieve economies of scale and scope associated with larger and more integrated operations. Each authority was entrusted with responsibility for water supply, sewerage, sewage disposal, water-resource planning, pollution control, fisheries, flood protection, water recreation, and environmental conservation in its own area. The reorganization implied that these authorities have environmental and regulatory

[4] These organizations were responsible for the supply and distribution of water.

responsibilities.[5] Through the Water Act of 1983, the authorities were nationalized; therefore, the control over the authorities was shifted in 1983 to the central government (Vickers and Yarrow, 1988: 389-392).[6]

In England, the British government's privatization program (1986 White Paper) reorganized the institutional and regulatory frameworks of the water-supply industry. The program goals are outlined as follows:

1. Restructure the ten water authorities into ten water-supply public limited companies (WSPLCs). Later on these WSPLCs will be offered for sale in the stock market.
2. Establish a system of regulating the WSPLCs.
3. Modernize the water and sewerage law.
4. Permit domestic water-metering trials on a compulsory basis.
5. Improve the legislative framework for the control of drinking water and river quality; furthermore, the industry will be regulated by a new Director General of Water Services, and some regulatory functions relating to the environmental matters will be retained by the WSPLCs (Vickers and Yarrow, 1988: 399).

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[5] Later, this right of regulatory function was abandoned and shifted to the National Rivers Authority.

[6] In the meantime, the privately owned water companies were not touched by the government policies, but were subject to strict regulatory controls, which include restrictions on the amounts of share and loan capital that can be raised, the methods by which new share capital can be raised, rates of dividend on share capital, rates of interest on loan capital, amounts that may be put into reserve and contingency funds, and amounts of accumulated surpluses that may be carried forward from one year to the next.

The role of the central government is also important in the case of Côte d'Ivoire. Privatization of water-supply services in the Côte d'Ivoire has been strictly controlled by the central government. In 1960, the Ministry of Public Works (MPW) awarded the Côte d'Ivoire Water Distribution Company (Société de Distribution d'Eau de la Côte d'Ivoire, or SODECI)--a subsidiary of a French water-supply company (Société d'Aménagement Urbain et Rural, or SAUR)--a monopoly right to operate and maintain the water-supply system in Abidjan for 30 years through a combination of affremage and concession contracts through a competitive bidding.[7] The government's control over the private sector is conducted by a unit in the MPW, which is also responsible for the planning and building of all large new investments in water-supply. This institutional separation of investments from operations makes it easier to evaluate SODECI's performance and ensures government control over the expansion of the system (Roth, 1987; Veljanovski, 1989).

Having discussed the institutional arrangements in these four countries, I now explain the role regulation plays in each country. In the following section, I will discuss the regulations necessary for water-supply privatization. The regulations are closely related to the form of privatization the government in each country has adopted.

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[7] A franchise is a contractual arrangement entered into for a specified period of time, with the franchisee paying a royalty to the franchisor for the rights assigned in addition to other possible considerations. Two types of a franchise arrangement are concession and affremage. See footnote number 3 for the definition of concession. Affremage is defined as an arrangement where the government is responsible for providing the capital investment of the water-supply system, and the private company is accountable for the management and maintenance of the system. In concessions, a contractual formula fixes the price at which water can be sold (Veljanovski, 1989).

Regulatory Framework

The need to protect consumers so that they are able and willing to pay for the utilities services was rather difficult to achieve prior to the 1930s in the United States. In fact the utilities enjoyed an enormous profit. The situation was partly due to the infancy of the accounting profession and of private utilities. Consistent with the establishment of regulatory institutions, the federal government has passed some guidelines for the utilities industries. The guidelines are subject to: (a) environmental standards (Safe Drinking Water Act); (b) accounting procedure standards and a uniform systems of accounts; (c) a standard rate of return; and (d) service, safety and management efficiency standards, as well as a standard formulation of the utility-rate base and its structure.

The state and local governments used the federal government's guidelines to pass more detailed regulations for technical, environmental, and financial aspects. To ensure that the regulations are not misinterpreted but are widely enforced, the federal government has deconcentrated its regulatory institutions, such as the Environmental Protection Agency, the General Accounting Office, the Security Exchange Commission, etc. Special regulations for privatizing the water-utility industry have been passed by the state and local governments in the United States and France and by the central government in Côte d'Ivoire and England. A comparative analysis of some key issues of the necessary regulatory framework will be presented in the following sections.

Statutory and Regulatory Authorities

One example of the regulation established for a privatization program in the United States, comes from the water and waste-water project in Salt Lake City. The local or state authorities were commissioned to issue bonds to finance the water projects; to convey existing water and waste-water treatment facilities to private parties; to authorize local authorities to enter into long-term contracts for water and waste-water services; and to authorize local authorities to assess user charges and the term of service between a public authority and a private owner of a facility (Goldman and Mokuvos, 1984).

In France, the local governments have the authority to open periodically the market to potential rivals of the current franchisee, so that the competitive environment of the French water-supply industry can be maintained. The local governments can also settle contractual arrangements. Franchises, in France, can last for as long as 30 years, when capital infrastructure is both owned and operated by the franchisee. In situations where private firms have operating concessions to operate and maintain capital that is owned by a public entity, the contract's length is 12 years at maximum. Due to this time scale, significant changes in demand, costs, and technologies may occur over the life of the franchise. The local governments, therefore, always require the franchisee to state clearly the pricing formula, which is usually complex, and to put clauses in the contract to allow for a renegotiation option, should the pricing formula break down due to unanticipated shocks (Hanke, 1984).

Financial Arrangements

In many privatization transactions in the United States, tax-exempt financing from the private sector is used to finance most costs of construction. Usually this agreement requires an unconditional opinion of a tax consultant because of the federal-tax regulation that should be strictly followed. The financing agreement and trust indenture will include the financial covenants and requirements imposed on the owner. These will also be reflected in the service agreement, particularly as related to service charge provisions and to capital or operation and maintenance conditions that affect project economies (Goldman and Mokuvos, 1984).

In England, the regulation on capital financing of the water-utilities authorities is set in a way that the authorities are directed to use internal funds rather than external borrowings.[8] This has been achieved by increasing operational efficiency and by postponing new investment proposals; however, the policy leads to a very high price increase because of the higher needs of cash flow (Vickers and Yarrow, 1988: 398).

Côte d'Ivoire has a different financing strategy. The government bears the costs of constructing the water system and controls the price and investment policies, while the SODECI manages and maintains the system. The financial arrangements between SODECI and the government of Côte d'Ivoire has been clearly specified and fixed for a certain period of time. SODECI is paid a fee related to the volume of water sold. The fee is based on agreed standards for staff, equipment, energy, and other inputs, plus a

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[8] Between 1974 and 1987, the proportion of external borrowing of the industry dropped from almost 100% to 10%.

margin based on agreed overheads and profits, which is indexed against inflation. SODECI's fee is about one-third of the water tariff, which is set to cover not only operation and maintenance costs, but also debt service (Roth, 1987). The performance of the company proved to be so satisfactory that it has allowed the company to sell its shares in the Ivorien capital market in 1978 in order to have more capital financing. Nowadays, SAUR retains 46% of the share, the public owns 46%, the employees 5%, and the state 3% (Kikeri, Nellis, and Shirley, 1992; Veljanovski, 1989).

Service Contract and Pricing Formula

The contract usually outlines the terms of the privatization partnership and includes any provisions, that protect the interests of both partners in the transaction. The terms of the service contract are most likely to be a take-or-pay agreement, which will provide the principal credit support for the project.[9] The agreement also covers the length of contract period; termination of contracts; the pricing formula; terms of payment; service-charge schedule--which usually includes a rate-escalation clause tied to labor, power, and material indices and force majeure events; and the allocation of liabilities and fines. In most cases, the private sector will be responsible for the operational difficulties and the quality of the effluent. The service contract may also include an engineering agreement, to allow the owner to provide or subcontract design and engineering services for the project (Goldman and Mokuvos, 1984).

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[9] A take-or-pay agreement stipulates a minimum payment. As an example, in the case of the Umbulan project, the minimum payment is stipulated for 260 million liters of water per day. If, on one day, the PDAB can only buy 200 million liters, it would still be required to make the minimum payment.

The pricing formula of the French water-supply industry, is usually set up with a ceiling on the price to be charged, while also allowing the franchisee to earn a minimum level of profits; consequently, the formula works against the consumers during a deflationary period and the other way around during an inflationary period. In the latter case, the governments often subsidized the franchisee through tax exemptions. An option to solve this problem is to make the franchise contestable in renegotiation, so that the competitive price determination features of franchises will not be lost (Hanke, 1984).

An important lesson from the French water-supply privatization is associated with the operational phase of the franchise's life. Analysts argue that by fixing the incentives for the franchisee, the franchisee tends to underinvest in fixed assets and reduce the maintenance quality. These problems have been solved by allowing the firm to amortize its investments fully during the franchise and also requiring the firm to be bonded with regard to the maintenance of plant and equipment. The latter requirement reduces the monitoring required by the franchisor because the bonding firm will, in effect, take over responsibility in this area and guarantee that the terms of the contract are met. However, the franchisor still has to perform its monitoring responsibility in order to perform its function as the customer's agent (Hanke, 1984: 21-23).

In the British water-supply industry, there is a rate-of-return regulation on the maximum amount of profit (the ratio of net operating profit to net assets on current account) the companies are able to earn, which ranged from 1.00% to 1.65% during 1984 through 1987. This has been argued to be a disincentive to the private sector to

participate in water-supply services, therefore discouraging competition in the industry; furthermore, there is a tendency to underinvest, which will endanger the future service quality (Vickers and Yarrow, 1988, and Stelzer, 1989).

In the United States, the rate-of-return standard varies just as utilities' regulations differ from place to place. Phillips (1988) mentions that, although there were a lot of disputes about the rate-of-return in the past, the Supreme Court has formulated no specific rules for determining a fair rate-of-return, but instead enumerated general guidelines. These guidelines state that the rate-of-return allowed to a public utility should be high enough to: (1) maintain the financial principle of the enterprise; (2) enable the utility to attract the new capital it needs to serve the public; and (3) provide a return on common equity that is commensurate with the return on investments in other enterprises of corresponding risk.

Phillips further explains that the Supreme Court provides a detailed interpretation of the pricing guidelines to each regulatory commission. Each commission then establishes its own pricing formula, which, in general, incorporates three important aspects: (1) revenue requirements, which are based on a utility basis (operating expenses, depreciation, taxes, and return on rate) or on a cash basis (operating and maintenance expense, debt service, payment-in-lieu-of-taxes, and plant extensions, replacements, and improvements); (2) cost-of-service, which can be classified as base costs (costs associated with service to customers under average load conditions), extra capacity costs (costs associated with use requirements in excess of the average), customer costs (meter reading, billing, accounting and collection expenses), and direct

fire-protection costs (public fire hydrants, related branch mains, and valves); and (3) cost allocation to specific customers, which can be based on distance, income groups among households, and industries.

Risk-Sharing Arrangements

There is no specific theory of risk-sharing arrangements for a privatization project. The experience of a public-private partnership in the United States suggests that in order to manage risks, there has to be a cooperative spirit which allows the partnership to thrive. Goldman and Mokuvos (1984) recommend that both parties must take time to work together to identify the risks involved in financing, constructing, and operating the desired project. Both parties must ensure that an acceptable risk-management approach is developed and implemented. Goldman and Mokuvos, nonetheless, provide the following important guidelines for risk-sharing arrangements:

1. Construction risks, such as cost overruns, contract suspensions, unforeseen site problems, force majeure delays caused by "acts of God" (fires, floods, and earthquake), and inadequate insurance, should be directly faced by the community, who is the project owner.
2. Both parties' involvement in the project preparation should be adequate, so that any detailed changes, problems, potential benefits can be justified and accepted by all parties.
3. Communities should require performance guarantees from the private operator, which include monetary penalties for noncompliance and contract termination clauses for extended nonperformance.

4. The private-sector firm should bear the operating risks, because the investors will be concerned about plant performance and will hold the operator accountable for its performance. To some extent, the private firm's risks of increased operating costs can be reduced by including cost-escalation clauses in the contract for the operation of the facility.

5. The community must be certain that the private firm is making the investments in repair and rehabilitation necessary to keep the plant operating properly, even after the service contract expires.

6. The financial risks associated with a privatization transaction are risks that every private firm takes when it makes a capital-intensive investment and/or undertakes a new business venture.

Conclusion

The experience of the privatization of the water-supply industry in the United States, England, France and Côte d'Ivoire indicates that privatization is a process that needs a lot of careful effort and takes a long time to prepare. The first desirable step to introduce a private-sector involvement into a natural monopoly market of the utilities industries is competition, which can be encouraged through regulations. My review of the regulatory framework and regulatory institution in other countries leads me to conclude that a clear understanding of privatization and detailed regulations for privatization of utilities industries are very important in securing productive efficiency and quality of product, as well as to reflect the social costs and benefits of public goods. These objectives mean that through privatization, it is expected that a

community will be able to purchase a widely available and privately produced public good or service at a price that reflects the community's ability and willingness to pay and that offers a fair return to the private producer, so that it can continue to produce the good or service in the future. The legal structure, statutory authority, and adequate financial regulations indicated by the privatization experience of water-supply industries in these countries, especially in the United States, have proven to be sufficient to attain the privatization and public-welfare objectives.

In addition to the regulatory and institutional frameworks, the experiences in these countries indicate that the government, by controlling the privatization program, has successfully achieved these objectives. The governments' control over the contractual arrangements--as indicated in the case of France and Côte d'Ivoire--has assured that society is able to pay for the water at a fair price, while still generating a fair return to the private-sector franchisee. These are the conditions that should be met to make a privatization program effective.

Indonesia has started to introduce private-sector involvement into its utilities industries, including water supply. The Umbulan Spring Water Project was the first pilot project in the privatization of the water-supply industry. As I explained earlier, the Umbulan project preparation has been going on since 1988, but, so far, it has not been implemented. In the next chapter, I will analyze how the project has been prepared and how the privatization goals and public-welfare objectives are expected to be achieved.

CHAPTER 3

THE UMBULAN PROJECT

As I briefly described in the previous chapter, negotiations of the Umbulan Project have been taking place for almost four years. For both the public sector and the private sector, the financial issues are the most difficult subjects upon which to agree. The unusual institutional arrangement of the project, inadequate regulatory framework, and lack of regulation enforcement seem to cause lengthy negotiations.

In the case of the Umbulan Project, the institutional arrangements are unusual, in that the government's representative, the East Java water enterprise (Perusahaan Daerah Air Bersih, or PDAB)[1], is not only acting as the main shareholder of the public-private partnership, but also the sole buyer of the project's output. This is an ambiguous arrangement because the two positions have different objectives. The first one has an objective to maximize profit, while the second has an objective to purchase a high-quality of output, which is continuously available at the lowest price.

In Indonesia, there are inadequate legal guidelines for the government to use when negotiating its privatization program with private investors. The inadequate regulatory framework permits the private sector to provide many alternative financial analyses of the project, all with the goal of maximizing profit. The government, however, is concerned with ensuring that affordable and fair prices are charged to the water consumers. Yet, without clear regulations, the government has had difficulties

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[1] A provincial water entity especially established to represent the provincial government of East Java in the Umbulan Project.

fostering the kind of competition that would force companies to keep prices down. Competition and an adequate regulatory framework are believed by analysts to be an effective means to promote efficiency in public-service provision. Nevertheless, the government is having difficulties in achieving the objective, because there are no guidelines for directing its private counterpart in the project preparation.

The unfavorable conditions mentioned above are worsened by a deficiency in implementing the existing regulations. From my research, I have come to believe that too much political intervention in the government decision-making threatens to compromise the regulations. Often private firms with the right "connection" are allowed to work around the regulation. These conditions discourage a competitive environment in the provision of water-services to Surabaya and its surrounding cities. These issues leave the viability of the project in doubt, because there will be little incentive for firms to attain productive efficiency. Later in this chapter, I will show why this efficiency and the public-welfare objective cannot be achieved, under the present circumstances. Before arguing that competition is going to be a difficult condition to achieve, I will present a brief description of the water-supply industry in Indonesia and the preparation of the project.

Origin of the Umbulan Project

Surabaya is the second largest city in Indonesia. As the capital city of the East Java province, it is the center of governmental and business activities for the region. Its strategic location in the Indonesian archipelago has made Surabaya an important transit city for the trade routes between the western and eastern parts of Indonesia. Yet of the

2.3 million population of Surabaya, 1 million inhabitants do not have access to clean water services. The existing services of the local water enterprise (PDAM Surabaya) cannot cover the demand for water in the city. Further, some of the surrounding cities, like Pasuruan, Gresik, and Sidoarjo are facing the same problem as Surabaya is having now.[2]

The lack of water services in Surabaya has been recognized for a long time. A 1976 inventory of water resources for East Java showed that there are many water resources available for Surabaya. Given financial, environmental, and technical criteria for water-resources development, the study indicates that the priorities for developing water-resources for Surabaya should be: (1) Karangkates dam, (2) Umbulan spring, and (3) Wonorejo dam.[3]

Competitive Bidding in the Project Preparation

After the Umbulan spring was identified in 1976, the MPW, through the Directorate of Program Development (Bina Program-Cipta Karya, or BPCK), started to prepare the development of the Umbulan Project.[4] In 1986, with financial assistance

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[2] Pasuruan, Gresik, and Sidoarjo already have water enterprises. More than 80% of the PDAM Surabaya's customers are households, while the other PDAM's customers are mostly industries.

[3] Later on, the 1988 East Java Water Resources Study not only supported the 1976 study, but also suggested that the spring water flow is high enough to provide the water needs in Pasuruan, Gresik, and Sidoarjo as well (Project Memorandum of PDAM Surabaya Consultant Team to PDAB of East Java, 1 August 1991).

[4] BPCK was directly responsible for planning and programming the urban infrastructure development in the MPW.

from the Japanese Overseas Economic Cooperation Fund (OECF), BPCK completed the detailed engineering design and estimated project costs for the Umbulan water-treatment plant.[5] The project was scheduled to be executed in 1986 through the MPW's DIP, but was later postponed because of the financial difficulties the government had. In the meantime, the water scarcity in Surabaya was still unsolved, and, consistent with the Chairman of BAPPENAS's National Urban Policy Statement, the MPW urged the Governor of East Java to invite the private sector to help finance the Umbulan project.

In August 1988, the investor were selected through project bidding, and P.T. Bimantara Siti Wisesa won the bidding. The bidding process was supposed to be held once, and the winner was be determined from it. Yet, even though Bimantara had withdrawn as the project investor, upon request, it was granted a repeat bidding and was reassigned as the winner.[6] One year later, Bimantara completely withdrew from the project because: (a) there was no clear decision by the government to develop the secondary water-distribution systems to the customers in the four cities, so that no provider could be assured that the project would be able to operate at the agreed upon full 4 m^3/sec. capacity; and (b) the provincial government was unable to give a pledge

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[5] Personal interview with Syafruddin A.T., staff of BPCK, and PDAB's file, "The History of PDAB Activities", prepared for the Umbulan Project negotiation between the Provincial Government of East Java and Bromo Consortium (July 1992). The project includes the development of a water-intake scheme for 4 m^3/sec., a pumping station, a surge-control system, a 61 km main-transmission network, and the Wonocolo reservoir (Lyonnaise, 1992).

[6] When influential large companies can renegotiate bids, competition is often discouraged among investors.

that the PDAB would be able to absorb the project's total production of 4 m^3/sec.[7] In April 1989, the Governor of East Java requested the approval from the Minister of Home Affairs to decide that the second-ranked bidder, the Bromo Consortium, should be appointed as the next investor of the Umbulan project. The Consortium's project cost proposal was Rp. 165.4 billion.

When the government decided to invite a private investor to participate in the Umbulan project, the provincial government of East Java and the MPW did not use the opportunity to announce publicly their intention to bid the project, for example, by informing the bidders of the expected price of water and quality of service, although the detailed engineering design of the project had already been available, including the estimated project costs and water price.[8] A public notice was not given because the government regulation for competitive bidding of public projects does not require government agencies to make the bidding information publicly available.[9] The implication of this policy is that it does not create the necessary competitive

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[7] This information is given in a letter from Bimantara to the Governor of East Java, dated 1 August 1989. The status of development of the secondary water-distribution system from PDAB to the PDAM in those four cities was still unclear (letter from the Minister of Public Works to the Governor of East Java, dated 3 March 1989). The OECF and the World Bank's intention to help finance this system were announced a year later.

[8] In his letter to the Governor of East Java, dated on 3 March 1989, the Minister of Public Works indicated that the price of Umbulan water proposed by Bimantara was close to the price they had expected before.

[9] The author in his field work found the following three requirements: (1) there must be at least three bidders in the process, (2) bidders should have experience in the industry, and (3) bidders should be able to prove that they have sufficient funds to finance the project.

environment in the industry. Potential investors might not have a clear reference to the specified output expected by the government in terms of technical, financial, and environmental aspects. They might even have a different understanding about the project. For example, the operational and technical requirements between drinkable-water and clean-water treatment plants are different because they require different technical designs and a different estimated project cost.[10] It is almost impossible for a true competitive environment to exist when there are a variety of standards, quality, and classification in the different project proposals.

The appointment of the investor in the Umbulan project went through a competitive-bidding process. Nevertheless, the bidding regulation was not appropriately executed, because, when the Consortium withdrew from the project, following Bimantara, the provincial government should have awarded the project to the third-ranked bidder. Yet, the Consortium, just like Bimantara, requested the provincial government and the MPW reappoint them as the investor.

From reviewing this experience, I conclude that, at the moment, competition cannot adequately be promoted in the Indonesian water-supply industry. As mentioned earlier, regulation can be used not only to promote regulation, but to protect the consumers from market abuse. In the case of the Umbulan Project, the regulatory

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[10] Personal communication with Nugroho Tri Utomo, a sanitation engineer from the Socioeconomic and Spatial Planning Bureau, BAPPENAS, 18 April 1993. He also explained that during the REPELITA I, the government's objective in water services was to provide clean water services all over the country. The quality of water to be provided at that time was lower than drinkable water quality--it has to be boiled before one can drink it. In those years, the government could only afford to provide water-system technology for lower-quality water (than that of drinkable water).

framework is an important way to protect consumers from the private monopoly company. Before discussing the regulations necessary for privatizing the water-supply industry, I will evaluate the regulatory institutions of the industry.

Regulatory and Institutional Frameworks

In Chapter 1, I presented the history of the water-supply industry in Indonesia. Since 1988, the industry has been jointly regulated by the MPW, MHA, and MOH. These ministries are responsible for technical and capital investment, institutional development, and quality control, respectively. The MHA has passed a regulation to have standard operating practices for PDAM, including the formula for setting the price of water. The Ministry of Finance (MOF) issued financial-management guidelines for PDAM. The MOH has passed the standard water quality for PDAM for each different area of services. The Indonesian government has passed two important laws, which affect the operation of the water-supply industry: the 1983 Tax Law, and the 1990 Environmental Law. It also established the association of local water enterprises (Persatuan Perusahaan Air Minum Seluruh Indonesia, or PERPAMSI) in 1982. The MOF controls all business accounting and taxation practices, such as depreciation rate, income tax, sales tax, account-reporting procedures, etc., which have been standardized through the 1983 Tax Law. The central government established the Environmental Impact Controlling Agency (Badan Pengendalian Dampak Lingkungan, or BAPEDAL), which controls the standard pollution emission for all industries. In 1989, PERPAMSI introduced a standard accounting procedure and management for PDAM.

From this institutional framework related to the water-supply industry, analysts may conclude that there should be sufficient regulations to manage the water-utilities industry; unfortunately, those regulations are specifically directed to control the operation of PDAM and BPAM. The experience in the United States and England shows that there has to be a regulatory framework for a privatization program, regardless of the availability of the utilities regulations. In the following section, I will evaluate the existing regulations for the industry and show how the regulatory institutions deal with the Umbulan project.

The Umbulan Project Under Inadequate Regulations

The preparation of the Umbulan project raises some serious issues about the operation of the water-supply industry, even though there are some regulations available. In the following analysis, I will focus on some important issues for a privatization program, i.e., the institutional arrangement and PDAB's statutory authority, financial arrangements, contractual agreement, and risk-sharing arrangements.

Institutional Arrangements and PDAB's Statutory Authority

From the early negotiation stage between the PDAB and the Consortium in 1989, there has been an indication that the PDAB does not have an important role to play in the project-preparation process. As a representative of the provincial government of East Java, the PDAB was fully authorized by the governor to act on behalf of the provincial government. The role of the PDAB can be measured in the equity and loan structure of the Joint Venture Company (JVC), as follows:

1. Equity[11]:

Costain/Mowlem Mott MacDonald International	Rp.	20,7 billion
North West Water International Commonwealth Development Corp.	Rp.	10,3 billion
Local Contractors	Rp.	10,3 billion
PDAB	Rp.	72,7 billion[12]

2. Loan:

Export Credit Guarantee Department	Rp.	135,0 billion
Commonwealth Development Corporation	Rp.	27,0 billion
Internal Bank Syndication	Rp.	60,0 billion[13]

Although the PDAB has the largest share in the company, in reality, it did not have a significant role in the project preparation. Many important tasks, such as a field survey, a detailed engineering design, and a financial analysis, have been handed over to the Consortium.[14] In addition, the Northwest Water International will have a contract for operation and maintenance of the project. The implication of this organizational structure is that PDAB will only be the company's supervisor.

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[11] The Bromo Consortium (January 1991). The Consortium consisted of an Indonesian and some British companies. They are PT Duta Comfact (team leader), Mott MacDonald International, North West Water International, and Costain/Mowlem Umbulan Joint Venture. Later on, PT Bakrie joined the Consortium and Costain/Mowlem left.

[12] PDAB's equity will come from the British Aid, Trade, and Provision grant (Letters from the British Embassy to BAPPENAS, dated 19/1/1990, and from BAPPENAS to the British Embassy, dated 18 May 1991).

[13] The Bromo Consortium (January, 1991) and a letter from the Minister of Public Works to the Chairman of BAPPENAS, dated 27 February 1992.

[14] PDAB's File, "Negotiation Between the Provincial Government of East Java and the Bromo Consortium", 27 September 1989. Whether the PDAB realizes this or not, the decision to let the Consortium do everything helped reduce their bargaining power in the negotiation.

As one of the shareholders and the representative of the provincial government, the PDAB was supposed to be able to monitor the execution of management contracts and assure that the JVC will be operating efficiently, so that the price of the water is affordable to all consumers. In fact, PDAB has difficulties in performing these functions, because of its unintended limited position in the project negotiation with the Consortium. When the MPW assisted the Consortium to finalize the project negotiation, the role of PDAB became even less than before.

Financial Arrangements

Each party, including the central government, has put a lot of effort into mobilizing financial resources for the project. Soon after the project was postponed in 1986, the MPW changed its project-financing strategy by suggesting that the provincial government invite the private sector to participate in the project. By inviting the private sector to join in a public-service provision, the MPW intended relieving the government's financial burden. In reality, however, this cooperative arrangement has not been implemented, because together with the Governor of East Java, the MPW requested a Rp. 5 billion grant from BAPPENAS for land acquisition.[15]

In the meantime, two important developments occurred during project negotiations. First, the MPW had approached the World Bank and the OECF to participate in financing the secondary-distribution systems in Pasuruan, Gresik, Sidoarjo,

[15] The land-ownership law forbids a non-Indonesian citizen or company from owning the land. It was still unclear why the JVC did not want to rent the land. The only possible explanation was that the JVC was trying to reduce operational costs as much as possible.

and Surabaya. Second, the total project cost as of January 1991 has been increased from Rp. 277 billion to Rp. 293 billion because of the rupiah's depreciation relative to the pound sterling and changes in technical design and cost structure. The project cost again escalated to Rp. 415 billion on 26 June 1992 and then decreased to Rp. 396 billion on 1 July 1992.[16]

The uncertainty in project costs affects the calculation of the price of water. The agreement on the price issue was the most difficult part to be achieved by all parties concerned. JVC will set a fixed price for water to PDAB, and the latter will sell the water to the PDAMs. The ability of PDAB to buy the JVC's production depends upon the ability of the PDAMs to sell the water to their customers. Of the four companies, PDAM Surabaya is the most important buyer for PDAB, because the company will purchase more than 50% of the JVC's total production, and more than 80% of its customers are households.

The Umbulan Project's price of water has always been a major issue. There has never been a clear explanation (either in the project documents or in the contractual agreements) from the consortium concerning how they set the agreed price of water at Rp. 638/m^3 and the sales volume at 2 m^3/sec. This is an unusual agreement, because the concessionaire is usually bound with a clearly determined set of prices in the

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[16] PDAB's File, "Status Report on Negotiations: Cost and Financial Analysis", 19 July 1992. Between January and June 1991 the inflation rate of the Indonesian economy in 1991 was about 9%, and the rupiah depreciation rate was 5% per year. Finally, the engineering design and total construction cost were considered relatively acceptable according to the standard conducted by an independent consultant at the amount of equivalent to Rp. 295 billion or US$ 145 million (Lyonnaise des Eaux, 1992).

contract before it is signed (Lyonnaise, 1992; Kikeri, Nellis, and Shirley, 1992; Veljanovski, 1989). The report by Lyonnaise (1992) mentioned that even though all parties have agreed on the price at that rate, the Consortium requires that it should still be allowed to adjust the price by the time the project construction is finished and all project costs are realized. It seems likely that the price will be higher.

At this price level and sales volume, the PDAB will not be able to sell the water to their customers, because of the limited selling capacity of the four PDAMs. PDAM Surabaya's selling capacity by 1996 will be only 1.6 m^3/sec.[17] During the negotiation process, the MPW strongly recommended increasing PDAM Surabaya's investment plan for the distribution network under the Surabaya Urban Development Project I project, so that it can sell the proposed 2 m^3/sec. of water. This would increase the loan financing from Rp. 182 billion to Rp. 395 billion--an increase of Rp. 203 billion. In a 20 August, 1992 letter to the mayor, PDAM Surabaya objected to the MPW's proposal, because it would mean the company would bear financial losses for at least five years. The company countered by proposing to finance the larger investment proposal from the central government's grant.

Risk-Sharing Arrangements

In the agreed Memorandum of Understanding and operational contracts, it is obvious that the JVC will be operating with a small risk. Four major flaws embedded in these agreements are:

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[17] A letter from PDAM Surabaya to the Mayor of Surabaya, dated 20 August, 1992.

1. The water-sales agreement indicates that the business risk is already minimized. The "take-or-pay" arrangement requires the PDAB to pay the contracted sales volume of 3 m^3/sec. starting from the first year of sales contract, even if the PDAMs are unable to sell the water to their customers. In its report, Lyonnaise mentioned that with this arrangement, the financial cash flow of all PDAMs will be negative, because they have to increase their debts for house-connection piped systems. To compensate for the negative cash flow, the central government is requested to subsidize at least Rp. 1.4 trillion for the whole project period (Lyonnaise, 1992: Annex III.9).[18] If this happens, the government will make a serious mistake--it will be shifting its subsidy from the society to a wealthy private enterprise.

2. In the case that the quality of water is unsatisfactory to the buyer, the JVC will terminate the supply of water and improve the water quality through some adjustments. Should any additional costs arise due to the adjustments, the company will augment the price of water. Therefore, there is no particular incentive to be efficient.

3. The project is supposed to be a "Build, Operate, and Transfer" system, meaning that when the concession agreement terminates, the project should be transferred

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[18] The central government subsidy has been requested by the PDAM Surabaya in its letter to the Mayor of Surabaya, dated 20 August 1992. In this letter, PDAM Surabaya explained that the company has to buy 2.3 m^3/sec., while its selling capacity is only 1.6 m^3/sec., and must be able to construct 110 new house connections per day. The 110 is a number that is impossible to accomplish, because the house-connection installment work depends on consumers' requests, which currently is estimated by PDAM Surabaya to be only 15 to 20 connections per day.

to the provincial government; however, there is an installation renewal plan being proposed by the Consortium in the agreement. With this arrangement, the reinvestment program of the project will be shifted to the provincial government.

4. The Consortium requires the provincial government of East Java to guarantee the obligations of the purchasers, the PDAB, and the four PDAMs; consequently, the provincial government must indemnify the JVC for any breach of the terms of the Bulk-Water Sales Agreement. In addition, the Consortium requires each PDAM and PDAB to issue a bank guarantee in case there is a default payment.

These clauses show that the financial risk of the project is fully transferred from the JVC to its customers and the provincial government. Risk-sharing arrangements like these are not likely to have happened in any private or public-private partnership project. The practice of such partnership in other countries shows that the private-sector investments will always take the largest portion in the companies' capital structure, because that is one of the privatization objectives--to relieve the government's financial burden over the project (Lyonnaise, 1992; Gomez-Ibanez and Meyer, 1992; Bös, 1991; and Cook and Kirkpatrick, 1988); therefore, the private sector usually bears most of the operational risks. It is therefore legitimate for this sector to earn profits out of the business operation to help compensate for the risks it is taking.

The case of the Umbulan Project suggests that the JVC has tried to reduce the business risks to the lowest possible degree. I have analyzed the Lyonnaise report about the project's financial arrangements and believe that they enable the JVC to earn high monopoly profits and bear minimum financial risks.

Conclusion

No matter how great the political intervention in the project preparation process of the Umbulan Project is, in particular, privatization of the water-supply industry, and other utilities industries, in general, will be continued in the future. Privatization has become an important factor of the Indonesian infrastructure development policies. Privatization in the water-supply industry was started in the East Java province for the first time in 1988, following the financial difficulties the central government had had in 1986. Negotiations between the public and private sectors have been going on since 1988, through a difficult, lengthy, and, yet, inconclusive process. Major reasons for this phenomenon are: (1) an inadequate regulatory framework to arrange a privatization project, which then leads to unfavorable institutional, financial and risk-sharing arrangements; (2) a lack of regulation enforcement; and (3) political intervention from the private and public sectors into the project. These three important factors have resulted in a serious discouragement of the competitive environment of the project and have put the productive-efficiency and public-welfare objectives at stake. Furthermore, the unregulated natural monopoly market of the water-supply industry in Indonesia is seen by the private sector as being an attractive opportunity to earn high profits.

Regardless of what will happen to the Umbulan Project, there is still an opportunity to avoid such practices in other similar water-supply projects in the future. With proper competition and adequate regulations, it is still possible to achieve social-welfare objectives and goals of privatization in the water-supply industry. Indonesia seems to have adequate regulations and regulatory institutions to achieve those goals for

its water-supply industry; however, the regulations are applicable only to PDAMs, and are still inadequate to be used as a reference for the privatization of the industry. Given the fact that Indonesia has relatively little experience in privatizing its water-supply industry, I will make some recommendations for privatizing the industry and/or promoting private-sector participation in the industry, in the following chapter, focusing on the necessary regulatory framework and its institution.

CHAPTER 4

RECOMMENDATIONS FOR PRIVATE-SECTOR PARTICIPATION

Privatization has become a world-wide phenomenon. It has become an important economic development policy for many countries and many industries. From the experience of the privatization of the water-supply industry in some developing and industrial countries, I conclude that there should be a regulatory framework and regulatory institution to guide the private sector in utilities' provision. The regulations are needed because the private-sector is going to operate in a market characterized as a natural monopoly. Bearing in mind that the private sector tends to maximize its profit and that there is a high opportunity to do so in a monopoly market, the government has an important task to create a competitive environment in order to achieve productive efficiency, through regulations.

The regulations are needed not only to control the utilities, but also to guide both the public and private sectors in preparing and implementing a privatization program--no matter what form of privatization the program may take. The experience of water-utilities privatization in Côte d'Ivoire, England, France, and the United States indicates that specific regulations and strong governmental institutions are essential for the success of privatization programs. In addition, as indicated in the United States and England, the privatization program should be well understood by the public and private sectors (Goldman and Mokuvos, 1984).

Privatization in Indonesia is a relatively new development policy, especially for the utilities sector. The form of privatization is still limited to public-private partnership, with a possibility to extend to full privatization, in terms of full private financing, as experienced in some cities. The Umbulan Project, being the first public-private partnership in the Indonesian water-supply industry, has been prepared for implementation since 1988, but with an inadequate regulatory framework for water supply and its privatization program. Many government officials have spent a great deal of effort and time to prepare the project. At the provincial and local government levels, some of the officials have been specially assigned to the PDAB to help in the project preparation.[1]

Having no indication about how to reach a satisfactory agreement between the PDAB and the Consortium in the Umbulan Project negotiation, the provincial government of East Java requested the office of the Deputy for Regional Affairs in BAPPENAS to help finalize the preparation of the project in the early 1991.[2] BAPPENAS is responsible for development planning and is not supposed to be directly

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[1] This is a kind of assignment that many government officials are reluctant to accept, because the assignment is categorized as a functional position. A functional position like this usually is established outside the institution's formal hierarchy, and it has no formal incentives either professionally or financially. In many cases, officials, who return to their initial offices, take the same or sometimes lower positions, although they performed satisfactorily on their assignments. This may be a disincentive for government officials to perform highly in such a partnership.

[2] Since the National Urban Policy Statement was passed in 1987, the office of the Deputy for Regional Affairs has been involved in the formulation of all urban development programs and the project-preparation stages. The tasks include the preparation of the East Java and Bali Urban Infrastructure Development Project, and the Surabaya Urban Development Project I.

involved in implementation. In the case of the Umbulan Project, the agency's effort has been limited to negotiating general technical and financial issues. BAPPENAS's involvement in the project is considered to be necessary because of its neutral position.[3] Unfortunately, BAPPENAS has been distracted with requests to take over projects being disputed among different government agencies, which may become an increasing problem in the future.[4] This tendency should be avoided. The agency's involvement in this project was to put the whole project in the right perspective and, in addition, to avoid the likely possibility that the communities in the four cities will pay an unnecessary high price for water. In July 1992, BAPPENAS decided to hire an independent consultant to review the project proposal.

The Regulatory Institution

In Indonesia, MPW, MHA, and MOH have responsibility for the control of the water-supply industry and provide the capital investment, institutional development supervision, and water quality-control of the public water-supply system, respectively. There is also PERPAMSI, which was established as a means of exchanging information about the PDAM. The association's objective is to improve the performance of the PDAMs. In the case of water-utility privatization, PERPAMSI would be the appropriate institution to promote, regulate, license, and control the PDAM and its private-sector partner. In order to perform the proposed functions, its legal status should be promoted,

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[3] Letter from PDAM Surabaya to the Mayor of Surabaya, dated 20 August, 1992.

[4] There are at least three other public-private partnership projects of water services being prepared in Semarang, Ujung Pandang, and Lhok Semauwe.

by a presidential decree, to a higher level, so that its policy decision could be respected by other government agencies. The arguments for this proposition are as follows: first, integrated water-supply management is still difficult to implement, because coordination among government agencies is not easy to achieve. Second, MPW should retain its responsibility to provide capital investment for the establishment of BPAM and to provide water services to low-income people, especially in areas where the establishment of BPAM is still not feasible. Third, the higher status of PERPAMSI encourages the water-supply industry to achieve a better performance, because it reflects the central government's serious concern with the issues of public welfare at the regional level. Fourth, PERPAMSI is a professional association of water enterprises; therefore, its professional capability and integrity would be sufficient to represent the provincial governments.

Suggestions for the Water-Supply Industry Regulations

The government should revise and extend its utility regulation, so that the technical, financial and environmental standards will be applicable to public and private (both domestic and foreign) investors. In addition, there must be a government regulation to guide the implementation of the utilities' privatization program. The regulation has to cover the issues of:

1. Standard technical specifications and engineering design, including standard water-quality services for different purposes of water usage. The fact that the quality of water for commercial use and industrial use is different requires special consideration to be given to the technical design of a water-treatment

plant. This standard may be used to ensure a proper investment plan for the right purposes.

2. A standard unit of account, accounting system, and reporting for the water-supply industry.[5] This standard can be used to avoid uncommon accounting reporting, which is commonly practiced by PDAM for loan application purposes. A standard accounting practice is extremely useful for planning purposes, especially in making comparisons among regions.

3. Standard environmental safety measures for the construction and operation of the water-supply system. The construction of a water reservoir and a water-treatment plant can be environmentally hazardous to its surrounding area, and an uncontrolled ground-water extraction may cause a serious problem of sea-water intrusion, as experienced in Jakarta, Surabaya, Medan, and many other cities in Indonesia. This environmental standard should prevent these problems from happening.

4. A standard formula for water pricing, and rate-structure guidelines. This standard may include standard cost components, cost classifications, and methods of cost assessment, which are used to set up the price of water.

5. A standard legal procedure to conduct the transfer of water rights. When a water resource is used for two different purposes, such as the Umbulan spring where it is used for irrigation and drinking-water supply, there could be a

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[5] The Accounting Information System issued by the PDAM should be re-evaluated to assure that its application will encourage efficiency in the operation of a water-supply company.

potential dispute between the water users. The legal standard should address this issue.

6. Standard contractual arrangements, which cover a joint-venture agreement, a bulk-water sales agreement, concession agreement, and an operation and maintenance agreement.

An adequate regulatory framework will help the implementation of the government's privatization program, although its implementation is always difficult to achieve, and it is time consuming. Detailed solutions of effective and efficient standard operating procedures of privatization is beyond the scope of this study. Nevertheless, the following suggestions may be proposed to help PERPAMSI, PDAM, private investors, and related government institutions in preparing the privatization program, such as:

1. Detailed procedures should be identified to help all parties conduct project negotiations. As an example, the negotiation preparation of the Sulawesi and Irian Jaya Urban Development Project was much faster and efficient once the IUIDP Management Group, led by the Socioeconomic and Spatial Planning Bureau in BAPPENAS, identified the requirements and procedures from the similar program for East Java and Bali.[6]
2. Training should be provided for the PDAM and PERPAMSI staff, so that they can understand the issue of privatization better, hence better represent the provincial and/or local governments in the public-private partnership.

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[6] This recommendation is based upon the author's experience.

3. Professional incentives and promotion criteria should be provided by the government to encourage the PDAM staffs and related government officials to encourage them to perform their duties at their maximum capacity. This provision is necessary because a privatization program needs a long-term commitment from the government officials, and project preparation and negotiations take a long time and a lot of effort to conduct.

Conclusion

The suggested regulations provided here are meant for large-scale, water-supply services in urban areas. For rural areas, privatization may not be feasible because of the high capital investment required for such a service. Water utilities' regulations should also be able to accommodate and encourage other forms of private provision of water services, e.g. water vendor, cooperatives, and other options of privatization forms, such as management contract and leasing. Further studies about these forms would help policy makers to formulate a comprehensive and practical regulatory framework.

The suggestions mentioned above are also meant to help all concerned parties to prepare and negotiate private projects in the water-supply services. Regulations can be useful if all parties have a strong commitment to carry out the purpose of utilities, which is to serve the community. Therefore, regulations not only ensure the attainment of privatization and public-welfare objectives, but also commit the public agencies to certain responsibilities and duties towards the private operators. Clear and fair regulation can provide a stable environment for business to operate in the utilities sector.

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