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Performance of a Privately Owned and Operated Water Utility and Implications for Private Sector Participation in the Production and Delivery of Water Services in Small Towns and Cities in the Philippines

Roberto Reyes ACOSTA*

Abstract

Private sector participation has recently been seen as an alternative to the inefficiencies of public water utilities and a potential solution to the crucial need for water infrastructure improvement in developing countries. Because of differences in managerial incentives for effective and efficient performance, private utilities are expected to perform better than public utilities. Under a private set-up, access of the urban poor to water is assumed to improve since the expansion of the water system to informal settlements is not dependent on limited government subsidies but driven by a private firm's desire to achieve economies of scale and greater earnings. The case of Calapan defies theoretical assumptions. After almost fifty years of operation, those customer-citizens whose water needs are supplied by the private water utility have to contend with poor quality and quantity of water services forcing them to rely on peddlers for drinking water. The private water utility has performed poorly compared to leading public water districts. Under private ownership and operation, there is no guarantee for the urban poor of adequate access to water. Poor performance by the private utility is caused by its own financial, technical and managerial weaknesses and the failure of the national and local regulatory environment to adequately monitor and act appropriately and adequately. There is a need for the Philippine government to reconsider its policy of promoting private sector participation in small cities and municipalities and to explore other alternative solutions, set up a dynamic regulatory framework in which the contending interests of private firms and consumers can be appropriately balanced and strive to create transparent and accountable governments at the national and local levels.

I. Introduction

The paradigm shift in public sector management in recent years has seen the retreat of the large and encroaching state from certain economic activities. In its place, the role being played by market-based contractual arrangements is increasing for the production of goods and services traditionally provided through public agencies. Urban water supply has not been

* Doctoral Student, Graduate School of International Development, Nagoya University

spared from this trend. Various contractual arrangements with varying degrees of private sector involvement are already ongoing worldwide (Silva, et al. 1998 : 1-2). Among developing countries, the Philippines is one of the leaders in private water investments in the urban water supply sector (Silva, et al, 1998 : 4). After having successfully concluded two concession agreements in Metro Manila and a joint venture agreement in the Subic Bay area, the national government decided to promote private sector involvement in small towns and cities (NEDA, 1998 : 5-83). While private sector participation may have been successful in large urban areas where economies of scale are easy to realize, there has been little experience of privatization in small urban settlements and it is not clear whether such privatization would be successful or not.

The paper will present the experience of the citizens of Calapan City whose water services is being delivered through a private utility which has a legislative franchise granted in the early 1950s. The case is unique and highly significant because outside of Metro Manila and the Subic area, Calapan is the only city in the Philippines where water services are being provided through a private corporation[1]. Results and lessons learned from the case study will have far-reaching implications to the Philippine governments present policy of promoting private participation in the water supply sector[2].

The paper is organized into seven parts. The methodologies used in data gathering and analyses are introduced first. Next, the background of Calapan City and the private water utility is presented. Then, the results of the performance analysis of the water utility is presented and compared with leading public water districts in the Philippines. This is followed by an analysis of the causes of the water problems in the city. The last section summarizes and concludes, with particular emphasis on the implications of the Calapan experience to the present Philippine government policy on private sector participation in water services.

II. Methodology

Data was obtained through the triangulation[3] of three data sources – key informant interviews, content analysis of various documents related to the water utility, and the researcher's personal observations. Key informant interviews[4] were done through a semi-structured questionnaire. Secondary data was obtained through content analysis of Calapan city government documents, annual reports of the water corporation, technical papers prepared for and against the water corporation, and position papers of the water corporation, non-governmental organizations and peoples organizations, including newspaper articles. Direct observation was done in the course of the interviews, walkthroughs in various parts

of the city, attendance at consultative meetings, and meetings of those nongovernmental organizations (NGOs), peoples organizations (POs) and barangay officials opposed to the private water corporation. A water utility questionnaire was administered to gather basic information about the Calapan Waterworks and Development Corporation (CWSDC). Primary and secondary data were obtained during two periods of extended fieldwork in Calapan and Metro Manila in September to October 2000 and February to March 2001.

Primary and secondary data obtained and validated through triangulation were analyzed graphically. Performance of the water utility was measured through indicators used by international development organizations (see for example, Bendahmane and Swindale, 1999; World Bank, 1996; MacIntosh and Yñiguez, 1997; WELL Resource Center, 1999). Financial analysis was done through the Dupont system[5]. From the primary and secondary data gathered, a problem analysis was constructed and presented through a problem tree[6] presenting the water supply situation in Calapan in a cause and effect relationship.

III. Background Information on the City of Calapan

Located 130 kilometers south of Metro Manila, the City of Calapan, serves as the administrative, commercial, religious and educational center of Oriental Mindoro province as well as the gateway to the island of Mindoro. The city has a total land area of about 250 square kilometers and is inhabited by 106, 631 people (NSO, 2001, <http://www.census.gov.ph/census2000/index.html, 28 May 2001>). Calapan is administratively subdivided into 62 barangays of which 17 are classified as urban and the other 45 as rural. Population density is an average of 427 persons per square kilometer.

Calapan was converted into a city in 1998 through legislation but has yet to exhibit the characteristics of a highly urbanized area. Urbanization is present only in 17 out of the city's 62 barangays. The commercial center is confined within a 300-meter radius from the city's public market and is an approximately 1.5 kilometer main avenue where most of the commercial and financial establishments are located. Lately, the city government has embarked on a plan to relocate the city hall and expects a new commercial center to arise near the new administrative site. Immediately outside the commercial center are residential areas. The previous lack of a master plan resulted in overcrowding in some areas but sparse population in the others and the City's Planning and Development Office is now trying its best to manage the expansion of the city through the implementation of a Comprehensive Land Use Plan. In line with the plan for a new administrative center, the city has also launched an urban renewal program to turn the existing commercial center into a commercial business district.

The city's economy is dependent on rice-based agriculture. Commercial and financial activities also revolve around the cultivation and harvest of the crop-commercial shops trade in agricultural inputs, the city's metal industry produces farm tools and implements, and most of the banks loan portfolios are for agricultural production and processing. Most of the city's rich families have made their fortune from rice milling and trading. Given its proximity to the Cavite – Laguna – Batangas – Rizal – Quezon (CALABARZON) Region and Metro Manila, the city has become not only a steady source of rice but also of swine and cattle to feed the fast growing demand for meat and meat products.

The city's people are descendants of thousands of families from mainland Luzon who migrated to Mindoro island in the early 20th century. (PPDO, 1998 : 3). Others are beneficiaries of the national government sponsored land to the landless programs primarily aimed at quelling the peasant rebellion in the early 1930s and 1940s (PPDO, 1998 : 4). Residents trace their roots from as near as Batangas just 28 miles across the Tablas strait, to as far north as Ilocos Norte in Northern Luzon and as far south as Romblon in the Visayas. On the other hand, most of the city's merchants trace their origins from Chinese traders who visited the island during the 16th and 17th centuries (PPDO, 1998 : 1). Being a city of migrants has been beneficial for local economic development but not always beneficial for building social cohesion; this is one of the reasons that the civil society movement is weak among the populace.

Ⅳ. Background on the Calapan Waterworks System and Development Corporation

4. 1. Calapan Water Supply: its beginnings in the early 1950s up to the 1980s

Founded as a family business of the Nable family of Oriental Mindoro, the Calapan Waterworks System and Development Corporation (hereinafter referred to as CWSDC) had its beginnings in 1952 as the Calapan Water Supply. The 2nd Philippine Congress granted a 25-year franchise to Mr. Carlos Nable, giving him the privilege and authority to construct and operate a water system in Calapan. In 1969, the franchise was extended to another 25 years for a total of 50 years ending in 2002.

The company started operation with only one deep well. In 1955, another well was added and the distribution system was expanded. In 1965, the third well was constructed to replace the first well experiencing salt-water intrusion with the help of a loan from the Development Bank of the Philippines (DBP). In 1969, because of the inability to pay loan amortizations, the bank foreclosed the assets of the water utility. However, with the extension of the franchise in 1969 by the 6th Philippine Congress, the Nable family reacquired the water utility from the bank. In 1976, a fourth well was constructed to replace the second well which was

also experiencing salt-water intrusion. In 1987, the fifth well was constructed and the distribution system was further expanded through loans from banks and individual creditors.

4. 2. Change from Calapan Water Supply to Calapan Waterworks System and Development Corporation

In 1989, the individual creditors were unable to collect maturing obligations from the Nable family so they took over the operation and management of the water utility. The creditors formed the Calapan Waterworks System and Development Corporation, paving the way for the change from Calapan Water Supply to the new CWSDC on May 23, 1991. To improve the deteriorating quality of the water system, the new owners tapped the formal financial market for loans. However, no bank was willing to lend to the corporation. Thus, they had to borrow funds from individual creditors. In 1991, enough funds were pooled to finance the construction of the sixth well.

4. 3. Opposition to the transfer of water permits and tariff increase

The transfer of ownership did not automatically transfer the franchise to the new owners. In 1991, the new owners applied to the NWRB for the transfer of the water permits and Certificates of Public Convenience and Necessity (CPCN)[7] from Mr. Nable to the CWSDC. The move was strongly opposed by the consumers, non-governmental organizations (NGOs) and the Calapan Municipal Government on the ground that the transfer would not meet the town's water needs and there was a plan to organize a water district[8]. However, on January 13, 1992, the NWRB decided to approve the sale and transfer of the water utility (NWRB, 1992a).

On May 25, 1992, despite another strong opposition by the consumers, NGOs, barangay officials and the municipal government, the NWRB also approved CWSDC's petition for an increase in water tariffs. While the Calapan Municipal Government requested the NWRB to roll back the approved tariff increase, the local officials had to withdraw their opposition when CWSDC challenged them to accept its previous offer of turning over the water utility's operation and ownership to the municipality provided it paid for all the stockholder's investment and assumed all liabilities.

4. 4. Deteriorating water quality and the idea to transform the water utility into a cooperative

On November 15, 1994, a strong earthquake measuring 7.2 on the Richter scale hit Mindoro island which heavily damaged the CWSDC's underground water pipes and deep wells. While some of the affected pipes were rehabilitated, the consumers soon complained

of increase in saltiness of the water. To alleviate the plight of the suffering consumers, the cooperative KASIMBAYAN (Kasamang Simbahan at ng Bayan or Cooperative of the Church and the People) negotiated with the troubled corporation to buy the water system for P29 million (about US $ 580 thousand). The cooperative also sought technical assistance to assess the water system's status.

4.5. Buy-out of the losing corporation and the promise of improved water services

Not wanting to transfer ownership to a cooperative, the majority owners instead sold their outstanding stocks to the ORMINA Realty and Development Corporation. After acquiring the outstanding stocks, the new owner also bought the remaining shares of the minority owners, eventually giving him management control over the CWSDC. The new investor's decision to acquire the water utility was made through the intercession of the mayor, the congressman and the governor of Oriental Mindoro. When the buy out was finally announced, the new owner promised a better quality of water to the consumers (Jabal, 1999). The new owner commissioned the preparation of a medium term water utility development plan covering the period 1998-2005 which was completed in December 1997 (CEST, 1998 : 8). CWSDC's plan calls for construction of nine wells in seven water rich barangays where free flowing water is abundant.

4.6. Discovery of the attempt to transfer and extend the franchise in a non-transparent manner

In 1998, the water utility's franchise was to expire in less than four years. To convince the new owner to invest in the improvement of the water system, the city's congressman worked for the transfer and extension of the legislative franchise. In July 1, 1998, a draft bill aimed at transferring the franchise of Mr. Nable to the CWSDC and extending it for 25 years was filed. Five months later in December 22, 1998, the bill was approved on the third and final reading by the House of Representatives and transmitted to the Senate for a matching bill. However, the haste by which the bill was passed precluded consultations with the people of Calapan. At the Senate, Senate Bill No. 1426 was filed.

In April 1999, a researcher of one of the Manila-based NGO affiliates of the KASIMBAYAN cooperative discovered the bill transferring the old franchise to the CWSDC and extending it for 25 years. KASIMBAYAN was promptly informed of this finding. The cooperative lost no time in organizing city-wide opposition to the bill's passage by collecting signatures from various sectors for petitions explaining to the Senate why the bill was opposed and arguing for the establishment of a water district to replace CWSDC. The resolutions were sent to the Senate's Public Service Committee which was then consolidating

the House of Representatives and Senate's versions of the draft bill to pave its passage into law.

4.7. The Unity of Households for Agricultural Water

While the news of the bill was spreading in the urban barangays, CWSDC was implementing the first phase of its plan. This called for the drilling of two wells in barangay Bayanan. Well permits were secured from the NWRB without the benefit of a thorough public consultation. In May 1999, test drills were conducted wherein water from 17 free flowing wells located near the site dried up. The experience struck fear among the residents on the possibility of losing the abundant source of free flowing water. They also discovered the CWSDC's plan for the construction of nine wells covering seven barangays. The news galvanized the hundreds of affected residents to pressure their barangay officials to ask for help from the mayor. However, the mayor ignored their requests. They then went to the provincial governor who advised them to seek the help of the city councilor who provides free legal services for environmental concerns. The councilor investigated the background of the issue and found that the Office of the Mayor had granted permits for the test drills. Having given permits, the mayor could not overturn his earlier decision even with the appeal for help by the affected residents.

With no one to turn to, the affected barangay officials got to know the officials of the KASIMBAYAN who were campaigning for the scrapping of the franchise of the water company and installing a water district in its place. Finding commonality and unity in their cause against the CWSDC, the two groups organized a coalition aptly named Unity of Households for Agricultural Water. The members included officials and members of the cooperative, affected people in the seven barangays where the planned wells would be located, and residents of the 20 barangays suffering from the poor quality of water services.

With their strength bolstered by a large membership and armed with the knowledge that doing projects with adverse consequences to the natural environment would need an Environmental Compliance Certificate (ECC) which require social acceptability as one of the criteria for approval, the UHAW demanded the Provincial Office of the Department of Environment and Natural Resources (DENR) not to issue an ECC for the new well. Given the strong opposition by the UHAW coalition, the DENR s provincial office did not grant an ECC for the wells. At the same time, physical and human barricades were also set-up at the new well site. The barricades prevented the CWSDC from continuing and eventually abandoned construction of the well.

4.8. Back to square one

The ECC issue was elevated to the Regional Office of the DENR. With all the arguments for and against the new well and each side presenting positions with adequately prepared technical papers, the office had great difficulty in deciding whether or not to grant the ECC. As of March 2001, the office was still evaluating the latest position papers submitted by each side.

Meanwhile, given the widespread opposition of Calapan's populace, the Senate's Public Service Committee suspended its work on the bill transferring the franchise from the original grantee to the new corporation. Moreover, with the impeachment proceedings against former President Estrada during the period October 2000 to January 2001, the Senate's legislative work on other issues was halted. In addition, from March to April 2001, campaigning for the national and local elections occurred. Given that it was only able to go through its first reading, the bill did not pass the 11th Congress.

With all these adverse developments, the wells suffering from salt intrusion were not closed. While some parts of the ageing transmission pipes were replaced, no new water sources were tapped and the utility continued to supply salty water. The consumers were back to where they were in 1997 – a state in which utmost patience was required as they had to wait for the foul smelling and salty water to arrive at unpredictable hours and had to store whatever became available for their domestic needs in containers. At the same time, they have to go through the daily ritual of waiting for the peddlers to deliver drinking water.

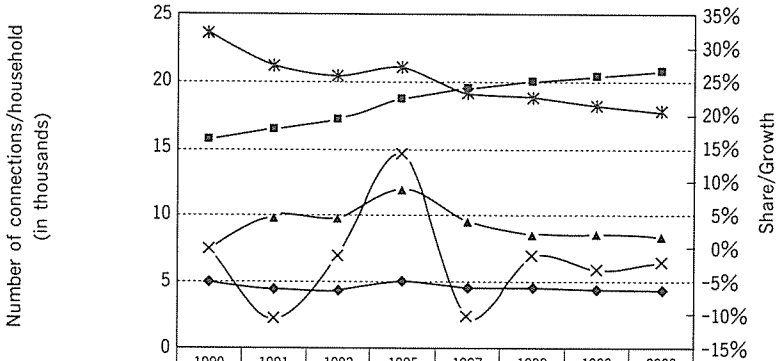
V. The performance of the private water utility

5.1. Coverage

The legislative franchise authorized the holder to operate a water system within the boundaries of the municipality (now city) of Calapan. Given its profit maximization objective, the delegated authority was interpreted liberally by the franchise holder as authority to construct a water system only in barangays where the houses are spaced close enough allowing for the installation of individual house connections at least cost. After almost 49 years of operation, the water utility was able to cover 20 barangays, about 31 percent of the city's 62 barangays (CEST, 1998 : 8).

Figure 1 shows a comparison of the water system's house connections with the growth of the city's household population as well as the coverage from 1990 to 2000. While the household population was rising steadily at an average of 4.1 percent per annum, house connections were decreasing at an average annual rate of 2 percent. The only notable exception was the period 1994-1995 when residential connections increased by 14 percent only

Figure 1. Comparison of CWSDC's residential connections and total household population, Calapan City, Oriental Mindoro Province, Philippines, 1990-2000



	1990	1991	1992	1995	1997	1998	1999	2000
Household Population	15,687	16,458	17,230	18,772	19,582	20,005	20,437	20,798
Residential Connections	5054	4514	4473	5111	4590	4537	4386	4293
Share of households covered by CWSDC	32.1%	27.4%	26.0%	27.2%	23.4%	22.7%	21.5%	20.6%
Growth of household population	0.0%	4.9%	4.7%	8.9%	4.3%	2.2%	2.2%	1.8%
Growth of household connections	0.0%	-10.4%	-0.9%	-14.3%	-10.2%	-1.2%	-3.3%	-2.1%

Source: Data for households population for 1990 to 1999 taken from City Government of Calapan. 2000. *Socio-economic profile of the City of Calapan.* Calapan, Oriental Mindoro, Philippines: Calapan City Government. Data for households population for 2000 was taken from National Statistics Office. *Total Population, Household Population and Number of Households by Province, City, Municipality and Barangay as of 01 May 2000*, 28 May 2001 <http://www.census.gov.ph/census2000/index.html>. Data for CWSDC's residential connections were taken from various reports of the CWSDC. Growth rates and share are the author's computation.

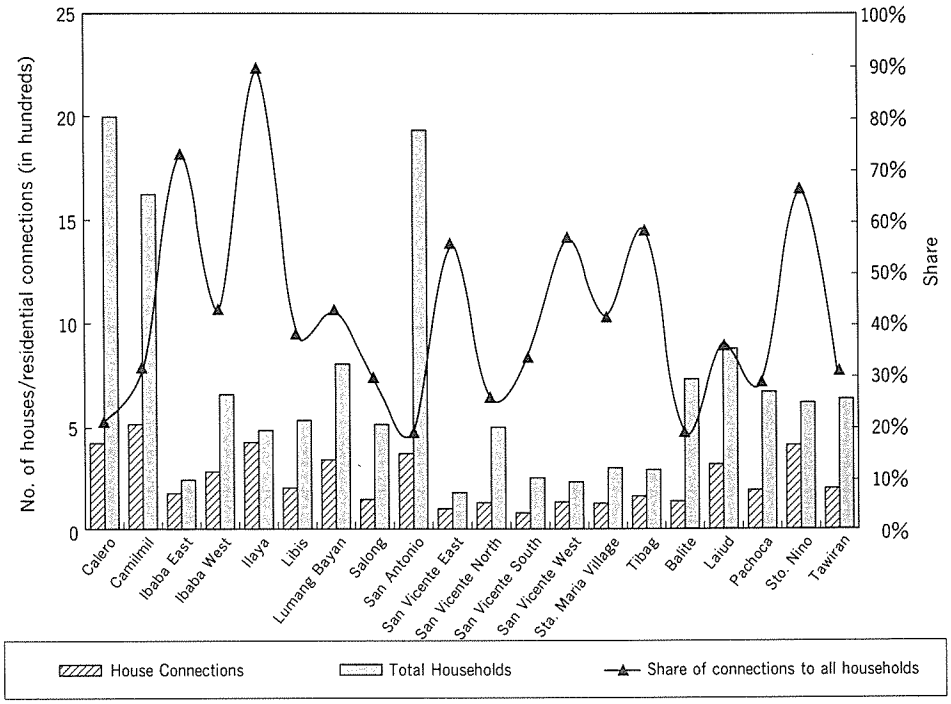
to decrease again the following year. For almost five decades of operation, the utility was able to cover only about one-fourth of the city's total households.

Even in barangays where there are distribution lines, not all of the houses are connected to the system. Figure 2 shows the coverage ranging from a low of 19 percent to a high of 89 percent. The average coverage is 34 percent meaning only one out of three households had a water connection with the CWSDC. The low coverage was caused not by the water utility's refusal to connect them to the system but by the voluntary disconnection by some of those who already had connections as well as by the unwillingness of those who were not yet connected. The decision was mainly driven by the poor quality and quantity of water services delivered.

5.2. Tariff structure

The water utility cannot arbitrarily decide how much to charge its consumers. It has to propose a tariff structure to be approved by the NWRB. But as the previous discussion has

Figure 2. Comparison of residential connections and total number of households in barangays covered by the CWSDC, Calapan City, Oriental Mindoro, Philippines, as of March 2001

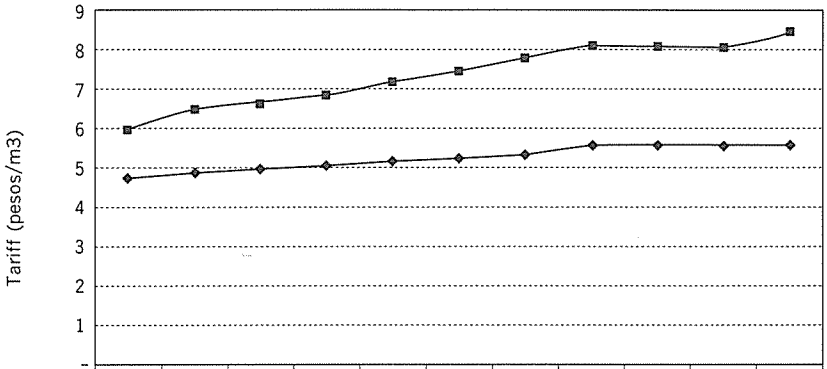


Source: Data for households connections taken from CEST, Inc. 1998. *Medium Term Development Plan (1998-2005) for the Calapan Water Supply System*. Calapan, Oriental Mindoro, Philippines: Calapan Waterworks System and Development Corporation, p. 8. Data for total households taken from survey undertaken by the City Planning and Development Office for the period January to February 2001. Share of connections is from author's computations.

shown, the water utility's earlier proposal has been approved by the regulatory agency even with strong opposition by consumers, the civil society and the local government. The latest tariff structure as shown in Figure 3 was approved in May 1992 and has not been adjusted since then.

Two tariff structures are used depending on whether the customer is residential or commercial. The tariff charged for residential customers is lower than for commercial customers. However, in both types, a flat rate is imposed serving as the minimum and the basis for incremental payments on per cubic meter of water consumed depending on the consumption bracket. Residential and residential customers pay a monthly minimum of P48 (about US $ 0.96) and P60 (about US $ 1.20), respectively, for the lowest consumption bracket of 0-10 cubic meters.

Figure 3. Water tariff structure by type of customer and volume of consumption, CWSDC, Calapan City, Oriental Mindoro Province, Philippines, as of March 2001

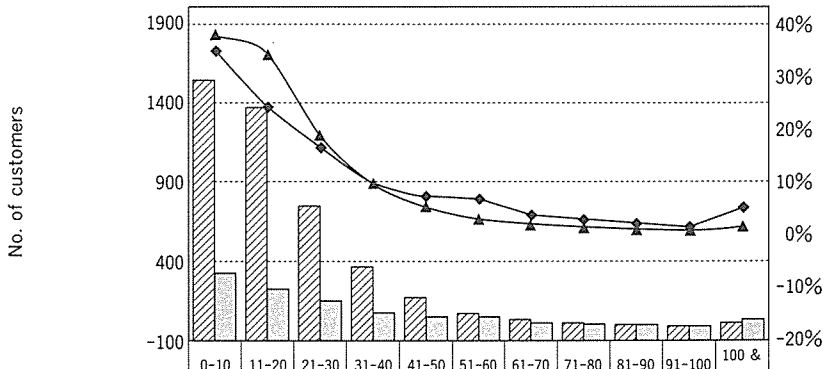


	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	100 & more
Residential	4.80	4.90	5.00	5.10	5.20	5.30	5.40	5.60	5.60	5.60	5.60
Commercisl	6.00	6.50	6.70	6.90	7.20	7.50	7.80	8.10	8.10	8.10	8.50

Range of monthly consumption (m^3)

Source: NWRB Decision on Case no. 92-395 page 3 dated 25 May 1992 signed by Luis M. Sosa, Executive Director, NWRB

Figure 4. Distribution of customers by type and monthly consumption, CWSDC, City of Calapan, Oriental Mindoro Provinoe, Philippines, for the month of August 2000



	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	100 & more
Residential	1538	1381	747	358	180	81	41	25	9	5	28
Commercial	322	223	151	83	61	57	26	18	12	7	43
Percent share of residential customers	35.0%	31.4%	17.0%	8.1%	4.1%	1.8%	0.9%	0.6%	0.2%	0.1%	0.6%
Percent share of commercial customers	32.1%	22.2%	15.1%	8.3%	6.1%	5.7%	2.6%	1.8%	1.2%	0.7%	4.3%

Source: Data for residential and commercial connections taken from *Calapan Waterworks System and Development Corporation. 2000. Summary : residential and commercial water use, CWSDC, August 2000*. Internal memo. Percent shares are the authors computations.

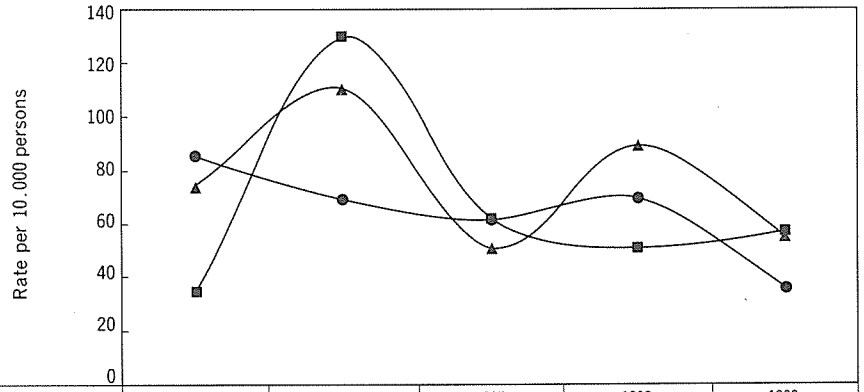
5.3. Distribution of consumers

Figure 4 shows the distribution of the water utility's consumers by type and monthly consumption during the month of August 2000. The majority of both types of customers are at the two lowest brackets of the consumption range indicating that most are small scale. For this particular month, consumption in the brackets 0-10 and 10-20 cubic meters accounted for 66 percent and 54 percent for all residential and commercial customers, respectively. Small customers account for the bulk of total consumption and tariff paid.

5.4. Effect on health of the residents

Since water coverage is limited to 20 barangays and the Calapan's Health Office does not keep mortality and morbidity statistics on a per barangay basis, it would be very difficult to attribute the occurrence of water borne diseases in the whole city as being caused alone by the quality of the corporation's water. To obtain an indication of the prevalence of water borne diseases within the coverage, historical health statistics for the five-year period from 1995 to 1999 for the Calapan North District where ten of the barangays served by the utility are located were reviewed. The results are shown in Figure 5. The figure shows the rise of parasitism and skin diseases in 1996. However, except for a small rise in 1998 in the occurrence of parasitism and diarrhea, a disease fatal for small children if left unchecked, a decreasing trend has been observed for all the diseases.

Figure 5. Occurrence of water-born diseases, City of Calapan North District, Oriental Mindoro Province, Philippines, 1995-1999



	1995	1996	1997	1998	1999
parasitism	75	111	51	89	55
Diarrhea	86	69	62	69	36
Dermatitis (Skin Diseases)	35	130	62	51	57

Source: Rural Health Unit North Section, Calapan City Health Office. Various dates. *Annual Reports for the period 1995-1999*. unpublished report.

5. 5. Water Quality

According to Philippine law, the quality of the water being delivered by any water utility, whether private or public, has to conform to the Philippine National Standards for Drinking Water (PNSDW). The utility has to subject its water to a thorough quality analysis and the results have to be submitted to the NWRB's Water Utility Division on a quarterly basis. However, the NWRB has no records of water quality tests being done by the CWSDC.

On the other hand, as part of its regulatory powers, the Department of Health (DOH) is also mandated to monitor the quality of drinking water in all localities in the Philippines[9]. With the decentralization of health and other services in 1991, the task of water quality monitoring has been devolved to the local health offices. In the case of Calapan, water quality monitoring falls to the City Health Office, in particular the two sanitary inspectors. With the use of simple mobile test kits, they mainly perform their water quality monitoring functions through conducting residual chlorine tests as well as coliform tests on the wells and at randomly selected end points in the distribution system.

While the sanitary inspectors have been performing water quality tests, records show that monitoring is not done on a regular basis. For the year 1999, monitoring results are available only for the months of January, March, July, August, September and November, meaning the tests were done once or at most twice a month. For the year 2000, monitoring records were available only for five months from January to May 2000 and are available for nine days, meaning monitoring has been done on an average of 1.5 times per month. In addition, the City Health Office does not do trend analysis of the monitoring results which could have been used as basis for decision making, say in the annual renewal of the water utility's business permit.

The only comprehensive water quality tests that have been done so far were the ones conducted by University of the Philippines at Los Banos Institute of Environmental Science and Management in July 1996. However, these tests were not done based on the voluntary efforts of the water utility nor the local government but in response to the appeal for assistance by the NGOs leading the opposition against CWSDC. Results of the tests showed the water being delivered by the water utility is not fit for drinking (IESAM, 1996 : 2-4).

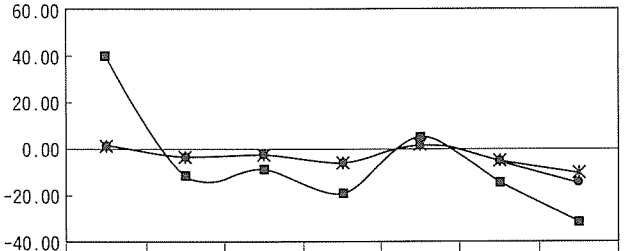
A trend analysis of the results of the residual chlorine tests in all of the water utility's deep wells for the period January 1999 to May 2000 showed that in almost all of the periods covered, the level of residual chlorine was either higher or lower than the prescribed limits. This indicates the water utility has not been treating its water properly. Over concentration of chlorine in the human body may have an adverse impact on health. It is a consolation that no one drinks from the CWSDC s taps and the water being delivered by the firm is used only for washing and bathing. This explains why consumption is limited to the two lowest consumption brackets. The latest comprehensive tests done by the Public Health Depart-

ment of the University of the Philippines Manila campus has found that the coliform concentration in some of the wells is well beyond the acceptable limit thus necessitating closure (Jabal, 2001).

5.6. Financial performance

Figure 6 shows the results of the analysis of CWSDC's financial performance for the years 1989, 1993 to 1997 and 1999 using the Dupont system. The results reveal that, except for the years 1989 and 1996 where the figures are positive, all the three measures of profitability have been negative for at least eight years. This means the water utility has been losing substantially. The transfer of ownership and management first in 1989 and the second in 1997 have not resulted in substantial improvement in the financial situation of the firm. The negative financial situation of the water utility will have tremendous implications for any serious effort to rehabilitate the deteriorating water infrastructure. Given the negative financial ratios, no bank will be willing to lend to the water utility.

Figure 6. CWSDCs financial indicators using the Dupont system of analysis 1989, 1993 to 1997 and 1999



	1989	1993	1994	1995	1996	1997	1999
NET PROFIT MARGIN (%)	40.05	-11.85	-8.81	-19.24	5.07	-14.92	-32.10
RETURN ON INVESTMENT (%)	1.47	-3.01	-2.28	-5.35	1.56	-5.09	-10.98
RETURN ON EQUITY (%)	1.57	-3.47	-2.65	-6.18	1.87	-5.64	-14.83

Source: Authors computations from the CWSDCs Audited Financial Statements for the periods 1989, 1993 to 1997 and 1999 submitted to the National Water Resources Board.

5.7. Overall performance

The performance of a water utility is measured not only by the parameters presented in the foregoing sections but also by a comprehensive set of indicators. There are no established minimum values for the indicators, and performance is usually judged in comparison with the prevailing industry average within a particular country. Since there is no benchmark

Table 1. Performance indicators of the Calapan Waterworks System and Development Corporation, Calapan City, Oriental Mindoro, Philippines, various periods from September 2000 to March 2001

Aspect of Performance	Indicator	CWSDCs Performance
Water production	Quantity of water produced	5 million liters per day[1]
	Quantity of water billed	74.2 percent[1]
	Energy/Chemicals as % of Operations Costs	25.7 percent[2]
Water delivery	Target population	107,434[1]
	Connections	5,296[1]
	Service coverage	20.1 percent[1]
	Connections/stand posts	None[1]
	Service timing	4 to 18 hours per day[3]
	Population density	4.3 persons per hectare[1]
Efficiency	Unaccounted for water	25.8 percent[1]
Water consumption	Quantity water consumed (average)	109 liters per capita per day[1]
	Water consumed in slum areas	Not available
	Metered consumption	100%[4]
	Quality of water delivered	Doubtful[5]
Sanitation	Service coverage	None
	Treatment	Not applicable
Effectiveness	Water related diseases	4.9[6]
	Customer surveys	None
Productivity	Connections/employee	94
	Population/employee	1,918[6]
	Percentage staff costs	41 percent[6]
Marketing (US $)	Per capita GNP	Not available
	Willingness to pay to vendors	US $ 3 per month[7]
Financial sustainability (US $)	Average domestic tariff	US $ 2.53/month[1]
	Community tariff	Not applicable
	Sewerage sustainability	Not applicable
Profitability	Operating ratio	132 percent[6]
	Return on fixed assets	−13.1 percent[6]
Liquidity	Current ratio	38.4 percent[6]
Credit worthiness	Debt equity ratio	0[6]
Financial efficiency	Days receivable ratio	0.5 days[6]
	Bill collection efficiency	90 percent[6]

Notes: [1]as of August 2000; [2] for the period January 01to Dec. 31, 1997; [3] as of September 2000 & depending on location from the wells; [4] as of September 2000; [5] as of May 15, 2001; [6] for the period January 01 to December 31, 1999; [7] as of March 2001

Source: Author's computations from: (1) Completed water utility questionnaire administered on September 15, 2000; (2) CWSDCs Audited Financial Statements for the period January 01 to December 31, 1999; (3) Interviews with key informants; (4) Newspaper accounts.

information on Philippine water utilities, it would be very hard to judge whether CWSDC s performance is below par or at par with the industry's average.

CWSDC's performance indicators were computed using various sources from both outside and inside the water corporation. While the available data covered different periods, the results presented in Table 1 can be taken as the best representation of the conditions of the water utility.

5.8. Comparison with publicly owned and operated water utilities

The main argument for private sector management over publicly operated water utilities is the presence of market incentives which drive the former to perform better (Shinshinski and Lopez-Calva, 1998 : 8-11). Public sector managers are assumed not to have the drive to perform optimally because the benefits resulting from performance improvement does not accrue to them in terms of incentives or promotions. Moreover, appointment to management positions in the public sector is dictated not by excellent performance but by the degree of influence to politicians (Shishinski and Lopez-Calva, 1998 : 10). Given these theoretical arguments, it can be hypothesized that CWSDC's performance is better compared to publicly operated water districts in the Philippines. To test this hypothesis, the performance of CWSDC is compared with the Davao Water District in Mindanao and the Cebu Water District in the Visayas. The results are shown in Table 2.

As to which of the three performs the best, the table shows that the CWSDC is ahead of the two water districts when it comes to water production per capita, control of water losses in terms of unaccounted for water, and management of accounts receivable. On the other hand, the two water districts perform better than the CWSDC when it comes to population coverage, water availability, availability of public taps from which those who do not have house connections can access water, operating ratios, staff productivity in terms of number of staff per thousand connections, annual salaries of managers, and in transparency of operations through public availability of annual reports.

The indicators used for comparing performance cannot be reduced to a single index, the results from which one can easily judge the best among the three water utilities. Moreover, comparison of performance must be done on a historical basis, not on a one-time image as Table 2 represents. However, if one uses the frequency of indicators in which the utilities have performed better for this particular period as the criteria for total performance then it can be said that the two publicly owned and operated water districts have performed better than the privately owned and operated CWSDC.

In terms of managerial incentives, the data shows that managers in the two water districts are paid higher than their counterparts in the CWSDC. If salary is the sole criterion for

managers to perform better, then managers in the case of Davao and Cebu water districts are better motivated than their counterparts in the CWSDC. However, the salary level is more in consonance with the responsibilities of the managers. Coverage of the Cebu and Davao Water Districts, at 71,000 and 110,000 connections, respectively, is larger compared to CWSDC's 5,296 connections. In terms of staff productivity, measured by the ratio of staff against water connections, the table shows that CWSDC is overstaffed compared to the two water districts.

Table 2. Comparison of water utility indicators, Metro Cebu Water District, Metro Davao Water District and Calapan Waterworks System and Development Corporation (CWSDC)

Indicator	Metro Cebu WD	Metro Davao WD	Calapan WSDC
Private sector participation	Source/Pipe	Billing and collection	All aspects of water utility's operation
Production/Population (cubic meters per day per capita)	0.08	0.13	0.16
Coverage (%)	23	58	20.14
Water Availability (hours)	18	22	4-18 (variable depending on location)
Consumption (liters per capita per day)	173	165	109.03
Unaccounted for Water/ Non-Revenue Water (%)	38	35/51	25.84
Average tariff (US $ /cubic meter)	0.33	0.07	0.12
Water Bill (US $/month)	15	1	2.10
Power/Water Bill Ratio	1.5	8.8	—
Public Taps	Available	Available	None
Metering (%)	100	100	100
Operating Ratio	0.55	0.83	1.35
Staff /1,000 connections	9.3	6.2	10.6
Annual Management Salary (US $)*	8,905	7,400	4,800
New Connection (US $)	80/12 months	42/12 months	50/at once
Accounts Receivable (months)	1.9	0.5	Negligible
Grant Financing (%)	Nil	Nil	—
Local Bond Financing (%)	—	—	—
Capital Expenditure /Connection (US $)	66	13	Not available
Annual Report	Glossy covered report	Glossy covered report	Type Script for Government

Note: *Original figures for Metro Cebu and Metro Davao were adjusted using exchange rates in September 2000 to reflect devaluation of the peso during the 1997 currency crisis, while for Calapan WSDC, salary was computed using prevailing exchange rate in September 2000.

Source: Figures for Metro Cebu and Metro Davao Water Districts were taken from McIntosh, A. C. and C. E. Yniguez (eds.). 1997. *Second water utilities data book: Asian and Pacific Region*. Manila, Philippines: Asian Development Bank while those for Calapan WSDC were computed from the completed questionnaire.

In terms of accountability and transparency, the two water districts are better because they come out with annual reports available to the public. On the other hand, CWSDC is very secretive concerning the state of its operations for it does not have annual reports readily available to the public. The corporation prepares two copies of its annual report, one for itself and the other for submission to the NWRB.

5.9. CWSDC and Calapan s Urban Poor

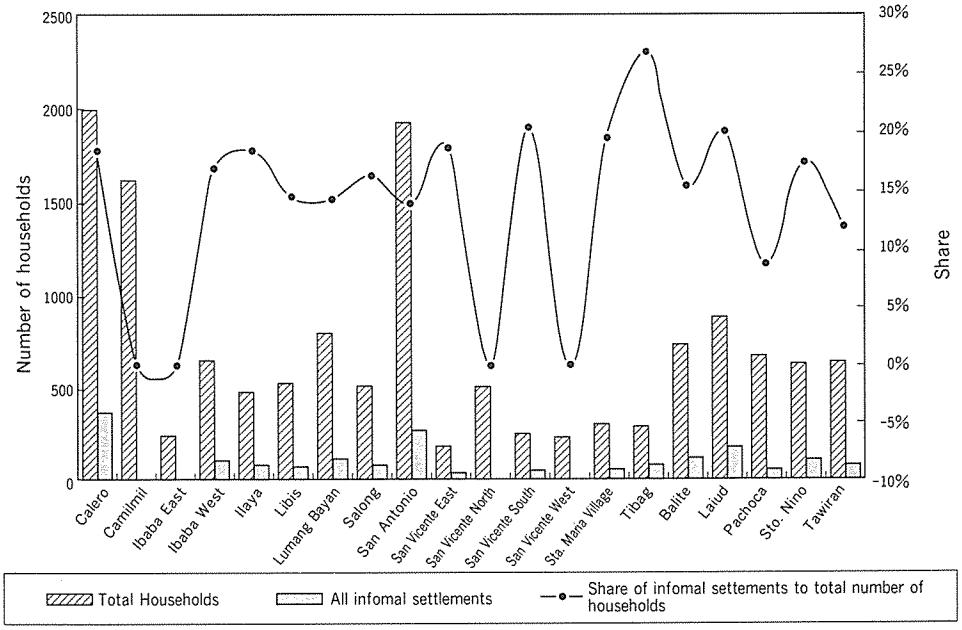
One of the very strong arguments against privatization of urban water services is the possible negative impact on the disadvantaged sectors of society, in particular the urban poor (WELL, 1999 : 14-16). On the other hand, it is also argued that one of the main reasons why privatization must be promoted is that it is the rich and middle class which benefit from subsidies used for public urban water supply systems. The urban poor who live in informal settlements outside of the water system end up paying higher to water peddlers. Thus, it is argued that by charging the affluent customers with the full costs of water, sufficient funds will be raised to enable system expansion in informal settlements[10]. This section will validate these arguments using the Calapan experience.

As of February 2001, the city had a total urban poor population of about 5,625 households scattered in informal settlements along the city's roads, river banks, canals, seashore, in public and private lands, and within the riverbed (CPDO, 2001). Of these, 1,881 households or about one-third are located in the barangays covered by CWSDC.

Figure 7 shows a comparison of the number of urban poor households to the total number of households in the 20 barangays. Of the 20, only four barangays do not have informal settlements. Of the 16 barangays where there are informal settlements, the share of the urban poor households ranges from a low of 8.6 percent to as high as 20.7 percent or an average of 13.3 percent. Thus, one out of every eight households in the barangays covered by the CWSDC is an urban poor household.

While there is a high incidence of urban poverty in the city, the CWSDC has no specific program, at present or in the future, to address the water needs of the urban poor. Neither does the Calapan City Government. There are no public taps from which the urban poor can get their domestic needs. Urban poor households end up being dependent on peddlers for domestic and drinking water needs, for which exorbitant fees are paid[11]. The Calapan experience shows that private sector operation of a water utility does not necessarily lead to improvements in the access to water of the urban poor.

Figure 7. Distribution of urban poor households and total number of households in barangays covered by the CWSDC, Calapan City, Oriental Mindoro, Philippines, as of March 2001



Source: Data for total households and urban poor households taken from survey undertaken by the City Planning and Development Office for the period January to February 2001. Share of informal settlements is from author's computations.

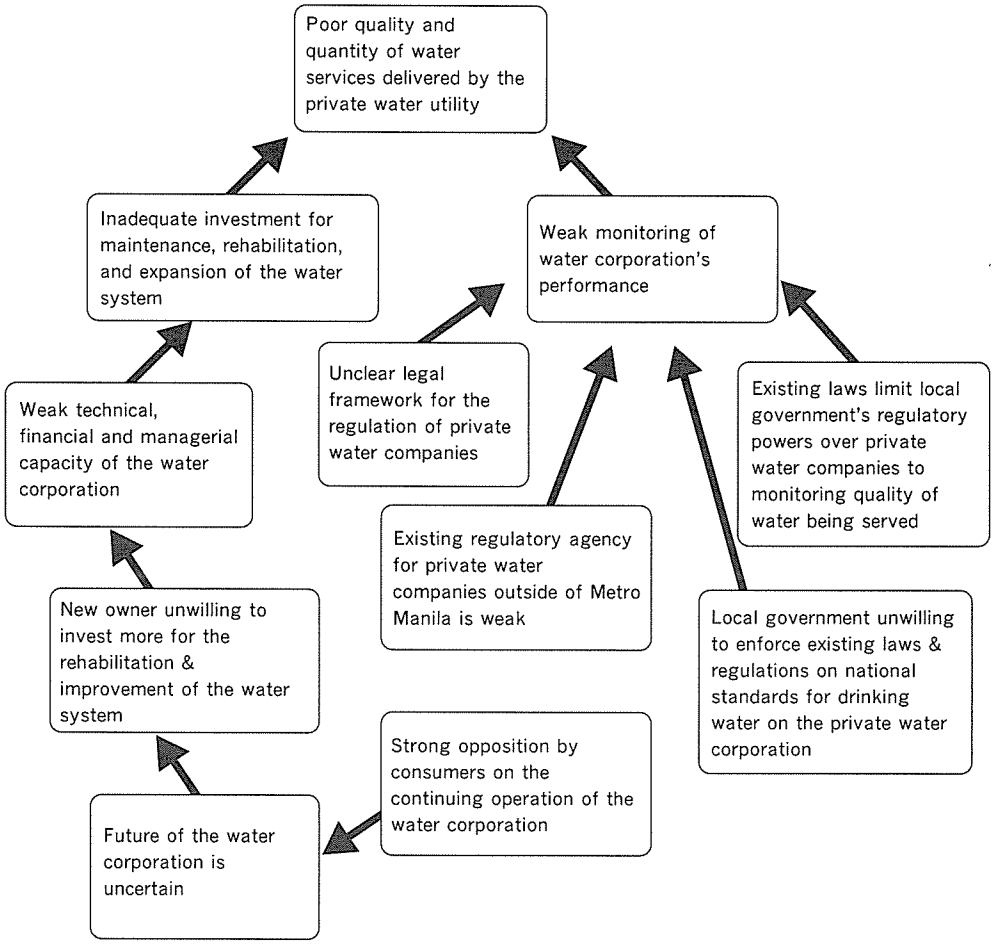
VI. What went wrong: an analysis of the urban water supply situation in Calapan

Given all the assumptions regarding the potential efficiency and effectiveness of privately managed urban water supply systems in developing countries[12], why does the Calapan experience deviated from popular expectations? To answer this question, the urban water situation was analyzed. An abridged version of the result of the problem analysis is presented in Figure 8.

The core problem is the poor quality and quantity of water being provided by the CWSDC. Shown below the core problem are the direct causes grouped into two general categories. The first are internal to the water utility in terms of technical, financial and managerial capacity. The second pertains to the failure of the regulatory environment to check the abuses of the private corporation.

Poor quality and quantity of water services has been the end result of long years of neglect on the part of the former owner-managers to adequately invest for the maintenance, rehabilitation and expansion of the water system in a technically sound manner. In turn, the failure to invest has been the result of poor decision-making on the part of the former owners with

Figure 8. Summary of problem analysis, urban water supply situation in Calapan City, Oriental Mindoro, Philippines.



Source: Abridged version of the problem analysis prepared by the author.

regard to their other businesses whose failure eventually dragged the water utility to the brink of bankcruptcy. The inadequacy of the former owners was not remedied by the takeover of new owners in 1989 and in 1997. While the present owner may have adequate personal funds to rehabilitate and improve the system, pragmatic decision-making dictates it is not prudent to put out his money considering the uncertainties ahead for the water utility. Under the present circumstances of strong opposition from a broad sector of Calapan's populace, the chance for the transfer and extension of the franchise is practically nil. Also, considering that the gestation period for investments in water supply is long, the most practical decision for the owner is to stop investing and minimize his losses. Even with the support of the local officials, the decision sphere has now been raised to the national arena in which these officials have minimal influence.

On the other hand, the internal problems of the water utility have not been adequately checked by the regulatory environment, which in theory should have anticipated the possibility of failure on the part of management and instituted remedial measures to minimize the potential effects of the problem. The national government agency tasked to regulate the private water utility was too far away to know what was happening at the local level. In addition the agency itself was suffering from grave institutional and organizational problems which severely handicapped its capacity to perform regulatory functions. Just like any other national government agency in the Philippine bureaucracy, the NWRB is suffering from lack of staff both in quality and quantity; its presence in the field is not felt because there are no field offices and the other government agencies[13] to which its field monitoring functions have been delegated are also engrossed in their primary functions, and there is not much budgetary support for it to perform its functions adequately. Moreover, the regulatory framework for privately operated water systems in the Philippines is in disarray because of the failure of the Philippine legislature from the 10th to the 11th Congresses to act on the numerous bills filed to address the worsening problem of the inability of the existing regulatory framework to adjust to the needs of a growing economy.

While decentralization and devolution of powers and responsibilities from the national to local governments should have minimized the effects of a disorganized regulatory framework at the national level, this has not helped as the experience of Calapan shows. In the case of Calapan, there are adequate laws and regulations to regulate the quality of the water service but the local government has been hesitant to enforce the rules because of the lack of direction and political will from the elective local officials. Moreover, the local officials are afraid of the potential backlash which may come from various sectors who will be adversely affected by unpopular decisions. These apprehensions had been caused by the earlier failure of the local leadership to present and discuss with the people in a transparent manner the water issue and the alternatives which may be pursued to minimize or bring long lasting solutions. The lack of transparency in decision-making on the part of the local officials fanned mistrust which eventually led to the confrontational stance of the consumers, the NGOs and the affected residents and barangay officials towards the private water company and the local government itself. This eventually led to the dire situation in which the people of Calapan find themselves today.

Ⅶ. Conclusions and implications with regard to the promotion of private participation in the urban water supply sector in small cities and municipalities in the Philippines

The paper examined the background and performance of a privately owned and operated

water utility in the Philippines delivering urban water services in a small city for almost five decades. Results show that being privately owned, operated and managed does not necessarily make a water utility efficient and effective. Comparison of the private utility's performance with leading publicly owned and operated water districts in the country revealed that except for limited aspects of performance, the former can not claim to be better than public water utilities[14]. This is contrary to popular expectations that the private sector is assumed to perform better because the managers have better incentives to deliver quality services. The results also indicate that under private ownership and operation, the urban poor have no guarantee of adequate access to potable water.

The performance indicators revealed that the private water utility has been faring poorly. Unsatisfactory performance of the corporation has adversely affected not only the daily lives of a substantial proportion of the Calapan population but local economic development as well. An analysis of the urban water situation in the city revealed that the core problem of poor quality and quantity of water services delivered is caused by the financial, technical and managerial weaknesses of the private water utility and the failure of the regulatory environment both at the national and local levels to adequately monitor and check poor performance. The weak regulatory environment is in turn caused by unfavorable formal and informal institutional arrangements as well as internal organizational factors both at the national and local levels.

What do the results imply with regard to the Philippine government's policy of promoting private sector participation as a solution to the inadequate water infrastructure investments in the country's small towns and cities? First, before the government goes further, there is an immediate need to set up a responsive regulatory framework by which the potential abuses of a private operator can be adequately monitored and evaluated. Devolution of regulatory powers to the local level is a step in the right direction for it brings decision making to the level of the people. However, local governments should not be left on their own to determine the local regulatory environment. While there are already mechanisms as specified in the Local Government Code of 1991 by which participatory decision making can be promoted among all stakeholders in local governance, there is a need to further reinforce these mechanisms specially in localities where elected officials have yet to wake up to the potential benefits of peoples participation. Second, while the Calapan experience may be considered as an extreme example since the approach being promoted by the national government does not favor private ownership but only the private operation and management of water utilities with asset ownership remaining with the public sector, there is a need to evaluate further whether private sector participation is the best alternative to solve the water infrastructure crisis facing the country today. How about reevaluating the merits of the water district

approach? While a high percentage[15] of the water districts have folded up, there are those which remain viable. The potential of public-public partnership may be an alternative where satisfactorily performing water districts are allowed to expand to neighboring towns and cities with the help of the national government. Third and last, since the country has been suffering from a negative image abroad[16], there is not much chance that foreign utility companies, which were the target of the PSP approach, may be enticed to come in the medium term. Thus, there is a need to look inward for local investors who might be willing to invest in the water sector. The best way to entice investors is to promote a level playing field. This is only possible if there is adequate proof of the strong presence of transparent and accountable governments both at the national and local levels.

ENDNOTES

1) There are four main systems in the Philippine water sector with each having its own legal basis and responsibilities. In Metropolitan Manila, the Metropolitan Waterworks and Sewerage System (MWSS) is responsible for water supply. In other urban areas, water utilities are operated and managed either by autonomous water districts financed by the Local Water Utilities Authority or as municipal departments of the local governments. In private housing developments and subdivisions, water supply systems are operated as private utilities under the supervision of the National Water Resources Board. In Public -Private Infrastructure Advisory Facility, The World Bank, Chapter 7, Water and Sanitation, *Private Solutions for Infrastructure: Opportunities for the Philippines*, A Country Framework Report, (Washington, D. C.: The World Bank, 2000) 25-27.

2) Private sector participation in all aspects of water resources management had been identified as one of the objectives of the objectives in infrastructure development in the 1998-2002 Medium Term Philippine Development Plan. In the plan, private involvement in the water supply, sewerage and sanitation subsector was qualified to mean that existing water utilities will evolve/graduate into different institutional types based on their level of viability as follows: (1) small urban areas (non-viable) – municipal/community-owned water utilities; (2) medium-sized urban areas (viable) – water districts; and (3) large urban areas (highly viable) – water districts with private sector participation. In National Economic and Development Authority, *Medium Term Philippine Development Plan 1998-2002*, (Manila, Philippines, 1998) 5-83.

3) Triangulation is defined as "the use of more than one data source, method, data type, researcher or theory to arrive at and confirm findings". It is a research strategy to support a finding "by showing that independent measures of it agree with it or, at least, do not contradict it" in M. Miles, M. and M. Huberman, *Qualitative Data Analysis*, (Thousand Oaks, CA: Sage, 1994) 266-267 as cited in D. Horton, R. Mackay, A. Andersen and L. Dupleich, *Evaluating Capacity Development in Planning, Monitoring and Evaluation: A Case from Agricultural Research*, ISNAR Research Report No. 17, (The Hague: International Service for National Agricultural Research, 2000) 20.

4) Key informants interviewed for this field study included: (1) Mr. Darwin Villarosa, Head, Urban

Planning and Development Department, Calapan City Government; (2) Ms. Helen Grace V. Rojas, Nurse III, North Section, City Health Office (3) Mr. Ronnie Fojas, Sanitary Inspector II, City Health Office; (4) Mr. Mervin T. Mangahas, Sanitary Inspector I, City Health Office; (5) Dr. Ma. Teresita M. Dolor, Assistant City Health Officer; (6) Mr. Amormio Carmelo Joselito S. Benter, City Trade and Industry Officer; (7) Mr. Rodrigo Bacarra, Barangay Captain, Bayanan I; (8) Ms. Teresita de Guzman, Program Director, Mindoro Assistance for Human Advancement thru Linkages, Inc. (MAHAL); (9) Mr. Eduardo De Guzman, Executive Director , Mindoro Assistance for Human Advancement thru Linkages, Inc. (MAHAL) and Board Member, Kooperatiba ng Simbahan at ng Bayan (KASIMBAYAN); (10) Engr. Jerry Comia, Spokesperson, United Households for Agricultural Water (UHAW); (11) Two community organizers of the MAHAL; (12) Consultants of the LGUUWSSP- Calapan Sub-Project (Financial Analyst, DCCD Engineering Corporation and Water Engineer, DCCD Engineering Corporation plus two support staff); (13) Project Officer, DILG-WSS PMO; (14) Mr. Wilfredo Landicho, Planning Officer II, CPDO; (15) Ms. Odette Pascual, Project Development Assistant, CPDO and support staff for the LGUUWSSP Calapan Sub-project Willingness to Connect Survey; (16) Mr. Joseph Brosas, Barangay Captain, Ibaba West; (17) Engr. Alfredo Lupig, OIC-Office of the General Manager, Calapan Waterworks System and Development Corporation; (18) Jiji Ricafort, Secretary, Committee on Legislative Franchises, Committee Affairs Department, House of Representatives, Congress of the Philippines; (19) Anthony Samonte, Committee Secretary, Committee on Public Service, Senate, Congress of the Philippines; (20) Belen Suarez, Supervising Regulatory Officer, National Water Resources Board. Unless other wise indicated, the information used in the article had been derived from the results of the interviews with the key informants.

5) The Dupont system of analysis is a search technique used by financial analysts "aimed at finding the key areas responsible for the firms financial performance.... It creates a structure used to dissect the firms income statement and balance sheet in order to assess its financial condition. It allows the firm to break the return on equity into a profit-on-sales component, an efficiency-of-asset use component, and a use-of-leverage component.... The system focuses on return on investment (ROI) and return on equity (ROE).... By summarizing a large number of financial ratios, the financial analyst can assess all aspects of the firm's activities in order to isolate key areas of responsibility." In Lawrence J. Gitman, *Basic Managerial Finance*, 3rd Edition, (New York: Harper Collins, 1992) 120-122 and 127. For detailed explanation on how to conduct the Dupont system of analysis see Gitman, 120-127

6) Situation analysis is the first step in the highly logical sequence of analytical methodologies in Project Development Management widely used by international development organizations. The methodology is termed differently depending upon the organization using the approach. For example, the German Agency for Technical Cooperation use the term ZOPP (Objective Oriented Project Planning) while the Norwegian Agency for Development (NORAD) uses Logical Framework Frame work (LFA). Lately, the Japanese ODA agencies have adopted the method and termed it Project Cycle Management (PCM).

7) A Certificate of Public Convenience and Necessity (CPCN) is "a formal written authority issued by the National Water Resources Board to a qualified applicant upon notice and hearing authorizing him to operate and maintain a waterworks and supply service for which a franchise is required by law". Aide memoire for the Minister, Ministry of Public Works by the Head Executive Assistant, DPWH dated August 08, 1979 as cited in Water Resources Information Section, National Water Resources Board, *Primer on the Application for CPC/CPCN in the Operation of Water Utilities*, (Quezon City, Philippines:

National Water Resource Board, no date) 3.

8) Water districts are government-owned and controlled corporations providing potable water piped directly to individual households in urban and rural centers outside Metro Manila with population of more than 20,000. In Philippine Association of Water Districts, *The Water Districts : Basic Facts*, (Quezon City, Philippines: Philippine Association of Water Districts, 2000) no page.

9) This is according to the Implementing Rules and Regulation of Chapter II (Water Supply) of the Code on Sanitation of the Philippines, Presidential Decree No. 856, 23 December 1975.

10) The water situation in big cities in developing countries is well documented, where the urban poor, often living in informal settlements unconnected to the publicly provided water system because of land tenure issues have no choice but to buy from water vendors and end up paying several times more than well-off families connected to the system. Examples are: (1) in Bandung, Indonesia, vended water is priced at 615 U. S. cents per cubic meter as against 10 cents charged by the city's utility company; (2) Jakarta – 185 cents for vended water versus 17 cents for those supplied by the government-owned utility; (3) Metro Manila – 187 cents versus 11 cents; (4) Karachi – 175 cents versus 8 cents; and (5) Ho Chi Minh – 151 cents versus 8 cents. This lopsided situation affecting the poor in whose name the subsidized costs of urban water supply is justified is not only evident in the Asia-Pacific region but also prevalent in Latin American and African cities. In Asian Development Bank, *Water Utilities Data Book : Asian and Pacific Region*, (Manila, Philippines: Asian Development Bank, 1993 and 1997).

11) Take the case of an urban poor family of seven (husband, wife and 5 children) living in an informal settlement near the Calapan City port which pays a peddler P35 (US $ 70 cents) for a daily supply of one drum of water (about 200 liters capacity) which means they have to spend P1050 (US $ 21) per month just for water alone.

12) See for example, Daniel Rivera, *Private Sector Participation in the Water Supply and Wastewater Sector : Lessons from Six Developing Countries*, (Washington, D. C.: The World Bank, 1996).

13) The functions of the NWRB at the provincial levels are subsumed under the responsibilities of the engineering districts of the Department of Public Works and Highways and the provincial offices of the National Irrigation Administration.

14) This conforms to earlier findings in the United States. For empirical evidence which shows that publicly owned water utilities in the United States are more efficient overall as well as in the technical efficiency associated with the employment of labor, capital, energy and material inputs compared to private water utilities, see D.K. Lambert, D. Dichev and K. Raffie, Ownership and sources of inefficiency in the provision of water services, *Water Resources Research*, Vol. 29, No. 6, June 1993, 1573-1578.

15) As of 1996, there are 551 Water Districts formed, 148 of which are listed as non-operational. In Australian Water Technologies, Brockman Tym International and Global Works International, National Strategy and Action Plan for the Water Supply and Sanitation Sector. Water Supply and Sanitation Sector Study. Draft Final Report. (Manila, Philippines : Asian Development Bank and National Economic and Development Authority, Republic of the Philippines) 3-5.

16) According to the World Bank, while the Philippines has made remarkable progress in developing a competitive private sector, various obstacles to private sector growth remain as manifested by the following: (1) the convoluted bureaucracy of the Philippines often cited by private investors; (2) the Philippines has a corruption index of only about 3.3 out of a possible 10, which means poor ranking in

terms of transparency and clarity in business practices, and is ranked in the bottom half of 99 countries surveyed in 1999 in terms of the corruption perception index published by Transparency International and Gottingen University; and (3) The Economists Intelligence Unit has given the Philippines mediocre ratings, ranking it 9th out of 16 economies in the Asia-Pacific region and a global ranking of 33rd out of 60 economies. In Public-Private Infrastructure Advisory Facility, The World Bank, Part 1, Cross-Sectoral Issues, Business Environment, *Private Solutions for Infrastructure: Opportunities for the Philippines, A Country Framework Report*, (Washington, D. C.: The World Bank, 2000) 5.

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