

COLOMBO'S WATER SUPPLY

A Paradigm For The Future?

The National Water Supply and Drainage Board of Sri Lanka is likely to be a good example of an evolving paradigm of institutional arrangements for water supply and wastewater management of the future in the developing world.

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One of the latest paradigms of the water sector has been that giving concessions to private sector companies to run water utilities will be a "win-win" situation for all stakeholders: consumers (both rich and poor), governments at all levels, international financing institutions, and the private sector companies and their shareholders. For example, the report of the World Commission on Water said categorically that "the single most immediate and important measure that we can recommend is the systematic adoption of full-cost pricing for water services".

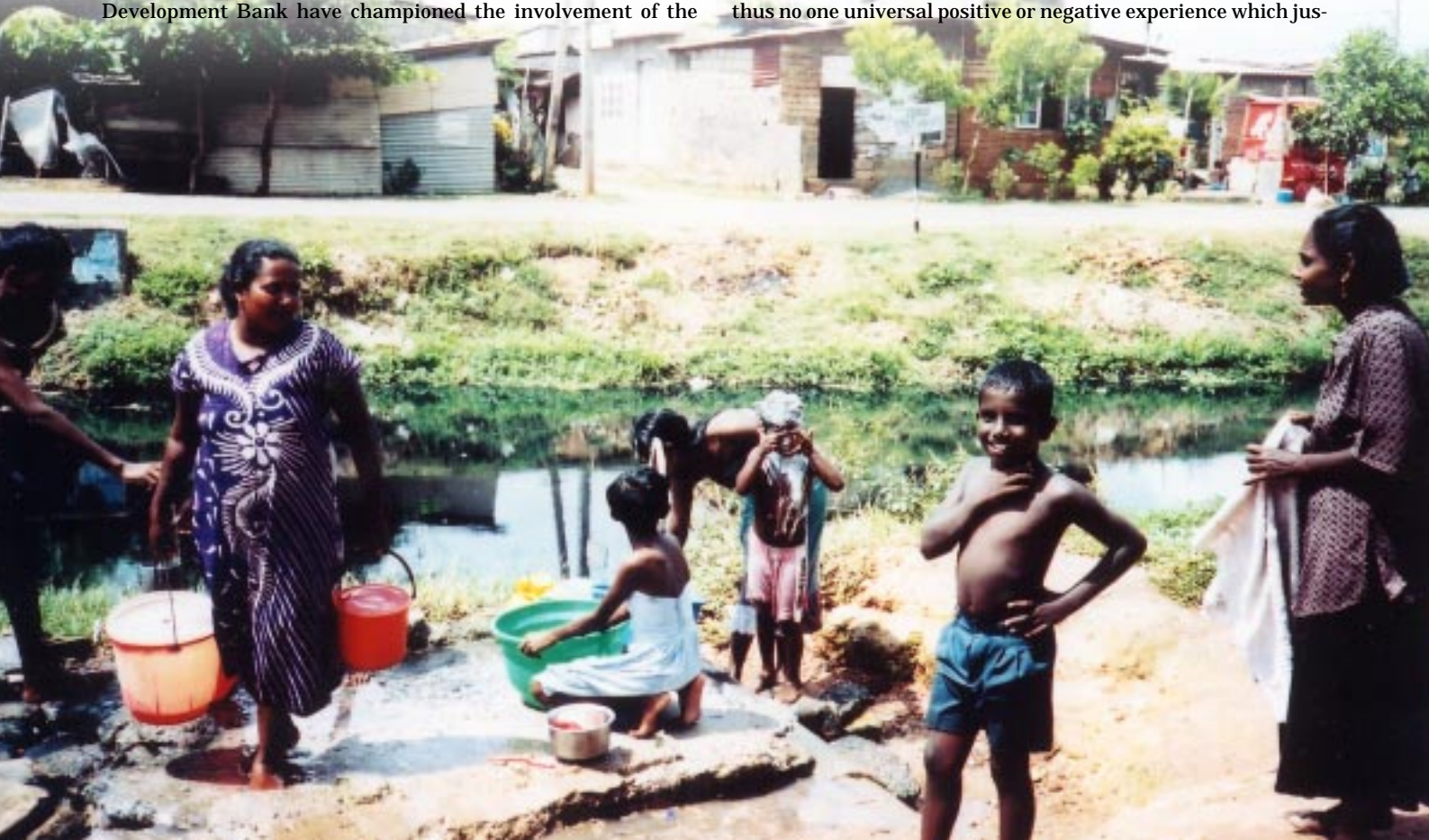
The Commission then went on to say that "without full-cost pricing, the present vicious cycle of waste, inefficiency, and lack of services for the poor will continue. There will be little investment from the private sector, services will be of poor quality and rationed, and there will be little left for investing in water quality and other environmental improvement".

Major development banks like the World Bank and Asian Development Bank have championed the involvement of the

private sector to significantly improve the existing efficiencies of the publicly-managed water utilities, and to bring billions of dollars of new funds to this investment-hungry sector.

A scant three years after the report of the World Commission on Water was published, any objective review will indicate that the results of giving long-term concessions to the private sector companies have produced very mixed results. There is no question that the private sector companies have improved the management efficiencies of water utilities in many urban centres very significantly. Equally, the experiences have been dramatically opposite in many other cities, where several major performance indicators of the utilities managed by the private sector companies have actually declined compared to even the earlier dismal efficiencies of the public sector. This proves once again the validity of a simple development theory: there are simply no universal solutions.

In terms of private sector involvement, based on extensive evaluations carried out by the Third World Centre for Water Management in Asian, African and the Latin American countries, we now know that even within a single country (let alone in all countries), the experiences have sometimes been very different. Thus, in a country like Morocco, private sector concession of Casablanca can be considered to be a success, but Rabat by all accounts was a failure. The situation can sometimes be different even within an individual urban centre. For example, one of the two water concessions for Manila is working significantly better than the other. Nor is the performance of one multinational company similar all over the world. The same multinational company that has performed extraordinarily well in one city, may have failed miserably in another city. There is thus no one universal positive or negative experience which jus-



tifies the paradigm of the institutional supremacy in terms of private sector performances.

Based on the independent evaluations that were carried out by the Third World Centre for Water Management in Asia, Africa and Latin America, it is now evident that based on actual performance evaluations, the paradigm that the private sector institutions will solve all the problems of water and wastewater management, efficiently, equitably and over a prolonged time period of 25-50 years of rapidly evolving national and global conditions, wherever they have had opportunities, is simply a non-tenable proposition. Private sector still has an important role to play, and their roles are likely to be much more significant in the future compared to what they are at present, but they are not going to be the panacea which many development institutions had proclaimed in the past, or are even arguing at present. We need to revise our views based on dogmas pro or anti public or private sector institutions, based on real facts and experiences.

The current preliminary view of the Third World Centre for Water Management is that even under the most optimistic but realistic assumptions, it is highly unlikely that the private sector concessions will provide water and wastewater management facilities to more than 15 percent of the world's population, even by the year 2015.

It is thus necessary to develop a new institutional paradigm for water supply and wastewater management for urban areas of the developing world, since the widely accepted present paradigm of the future is unlikely to be the main approach of the future. Based on the analyses carried out at the Third World Centre for Water Management, it now appears that the primary institutional paradigm is likely to be to improve very significantly the current performances of the public sector institutions. This may not be an easy task, but based on the experiences in a few developing countries, it is a doable task. Equally, the private sector will play an important role within this new institutional paradigm, but not as the managers of large concessions as exhorted in the past, or expected at present, but as providers of specific services like meter-reading, billing, bill collection, leak detection and repair, vehicle management, construction of desalination plants on a BOT basis, etc. Paradoxically, one major direct benefit of the promotion of the private sector as the preferred institutional paradigm of urban water management in recent years has been significant and steady improvements in the performances of public sector bodies in many areas. Such improvements can be seen in the performances of the public water utilities ranging from the United States to several developing countries, including Sri Lanka.

NWSDB OF SRI LANKA AS A POSSIBLE MODEL

The National Water Supply and Drainage Board (NWSDB) of Sri Lanka is likely to be a good example of an evolving paradigm of institutional arrangements for water supply and wastewater management of the future in the developing world. This prognosis is based because of an in-depth evaluation that was carried out in late 2002 by the Third World Centre for Water Management for the Greater Colombo Water Supply System on behalf of the Japan Bank for International Cooperation (JBIC).

The Government of Sri Lanka has recently proposed a draft national policy which has recommended some specific steps to improve the performances of NWSDB, as well as to enhance its economic sustainability. The draft policy in a sense confirms the current philosophy of the Board. The draft policy recommends, among other issues, the following:

- Water tariffs in the urban areas should be set at such a level that it should be possible to recover operating costs and depreciation, and should be gradually increased "to recover the



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full supply cost of providing services, including debt service and a reasonable rate of return".

- Cross subsidies between commercial/industrial consumers and domestic consumers should be reduced to a reasonable level. However, what constitutes a "reasonable level", or how it can be estimated, is not specified in the policy. It should be further noted that at present there are cross-subsidies also between projects, which also need to be progressively reduced, and perhaps eliminated for most cases, unless there are very special and specific justifications for maintaining them on an individual basis.
- Sewerage tariff that covers operation and maintenance costs shall be introduced, based on water consumption for the seweraged areas, and also as and when sewerage services are introduced to these new areas.
- For low-income people, appropriate life-line tariff should be available to ensure the affordability of water of sufficient quantity and quality to satisfy both basic consumption and hygienic requirements. It should be noted that a process which identifies and appropriate life-line tariff for the poor, without subsidising the rich, has not been easy to formulate, neither in Sri Lanka, nor in any other developing country. This aspect will require further intensified research in order to identify the various policy-options available to formulate an appropriate life-line tariff for the poor under the Sri Lankan conditions, which unnecessarily does not subsidise the rich, who can pay for the services they receive.
- Operational efficiencies of the water supply systems should be improved, and the levels of non-revenue water in all projects should be significantly reduced from their current high levels. This aspect is a very important consideration for Sri Lanka, both for existing and new projects.
- Water demand management programmes should be implemented to reduce the levels of the current consumptions. In

addition to the proposed economic instruments, other possible alternatives should be considered (for example, education and communications) accelerate the use of demand management practices.

It should be noted that the urban domestic water tariffs in Sri Lanka are still subsidised by the Government, and by cross-subsidies between consumers, and also between various projects. These various subsidies, however, have been steadily declining, especially during the past ten years. For the Greater Colombo Urban Water Supply schemes, the current Government subsidies include:

- 50 percent subsidy for the foreign loan components; and
- 100 percent subsidy for the Sri Lankan Government contributions that is available in the local funds.

In other words, the Board is required to pay back to the Government only 50% of the foreign loans, at an annual interest of 10%, over a period of 24 years, with another two years of grace period, if considered necessary. Furthermore, the Board returns the funds to the Government in Sri Lankan rupees: the Government assumes the entire foreign exchange risk, which could be quite substantial under many conditions.

Interestingly, the revenue collection for the urban water supply in Sri Lanka started in 1982, only some two decades ago. Considerable progress has been made since that time, especially during the 1990s, and there have been continuous improvements in the methods used to set the tariff structures, the levels of the tariffs, and the collection of the revenues outstanding from the consumers. Viewed in a different fashion, the provision of free water services to the urban consumers of Sri Lanka really started to become a history from 1982.

The trend of average monthly household consumptions since 1996 has been one of a regularly declining one. For example, an average household consumed 25.2m³ of water per month in Greater Colombo, and 18.8m³ in the regions in 1996. These consumption levels have steadily declined to 21.6m³ and 16.3m³, respectively, by the 2002 (the figures are for up to September for both the years concerned). This indicates that there was a net reduction of household consumption by 14.28% in Greater Colombo, and 13.3% in the regions, within this seven-year period only. This declining trend is expected to continue for the next several years. It should be noted that this reduction in consumption is also a current objective of the Board so that more people can share effectively the same quantity of available water.

Viewed differently, at the per capita level, similar trends can be observed. In 1995, per capita daily consumption in Colombo was around 200 litres. The consumption level has now come down to about 140 litres, primarily through water pricing mechanism. If this can be further reduced to 100 litres, a level that is considered both realistic and possible, the current total water demand of 246,000 m³/day, could be reduced to 185,000 m³/day, thus reducing the current demand by about 61,000 m³/day. It is interesting to note that the Phase 1 of the proposed Kalu Ganga project will deliver almost identical amount of water, that is, 60,000 m³/day, but at a capital investment of US\$84 million. Thus, soft options, like demand management, promotion of water conservation, etc., need increasingly more attention to meet the identical social goals. Many times some of the soft options can be implemented at cheaper economic and environmental costs, and within a much shorter time-scale, com-

pared to hard options like development of new water sources.

Another important factor that has an impact on the total revenue is the efficiency of the collection of the bills by the Board. Table 1 shows the actual monthly water consumption and the corresponding water bills for the period 2000-2001. In terms of bill collection, it has to be admitted that *the performance of the Board has been exemplary during the past decade, and this high level of revenue collection is seldom matched in other developing countries*. The total bill collection efficiency varied from a low of 89% to a high of 99% during these nine years. The bill collection efficiencies of the Board for the 1993-2001 period is shown in Figure 1.

Table 1: Average monthly consumption and bill per household, 2000-2001

Areas	Monthly consumption (m ³)		Monthly bill (Rs.)	
	2000	2001	2000	2001
Greater Colombo	22.4	21.95	196.62	235.17
Regions	17.7	16.5	113.02	125.67
Average, Sri Lanka	19.67	19.15	154.27	178.95

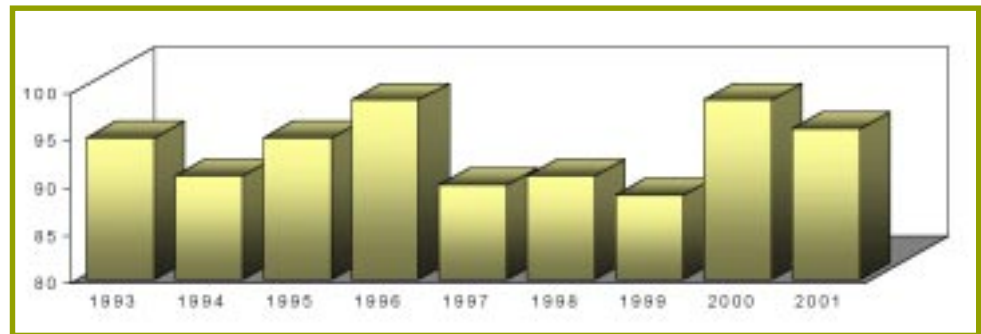


Figure 1. Bill collection efficiencies of NWSDB, 1993-2001.

One of the reasons as to why the Board has an excellent bill recovery record is because it has an elaborate, well-established and transparent process. Consumers are well aware of this process, and they are aware that if the bill continues to be unpaid, the water connection will be cut-off. In addition to the disruptions and inconvenience it will invariably cause to the various household activities, there is an additional reconnection charge which has to be paid. The connection charge, after disconnections, is Rs.500 for the households and Rs 1500 for all others.

The Board has also successfully reduced its staffing levels very significantly during the 1990s. In 1991, the Board had 33 staff members per 1000 connections. This has been dramatically reduced by 2/3rd by 2002, when there were 11 staff members per 1000 connections (Figure 2).

Private Sector Involvement – The issue of economic sustainability of an institution cannot be answered by water tariffs and current revenues only: other factors need to be considered as well. Among these other factors are institutional efficiencies and level of non-revenue water (Table 2). Logically and rationally, consumers should not be expected to pay for the inefficiencies and shortcomings of any institution, through higher water prices. Accordingly, if full cost recovery for water and sanitation services is to be the final objective, it is essential that all water-related services be made as efficient and as logical as possible, so that the water users are prepared to pay higher prices that are consistent with a lean operation.

In this connection, it may be desirable to consider the possibility of outsourcing many of the activities that are currently

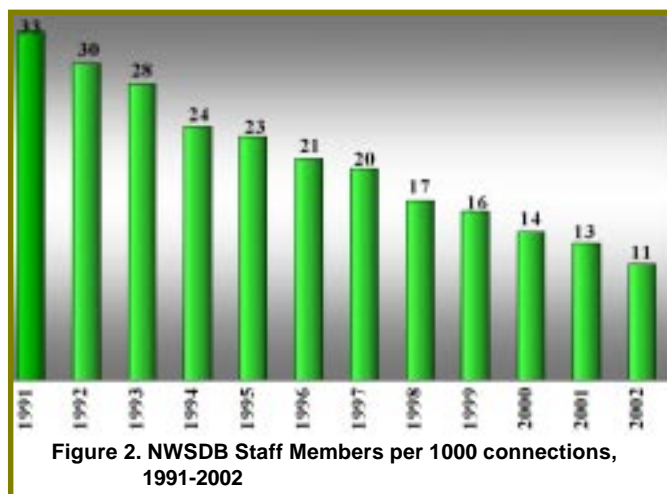


Figure 2. NWSDB Staff Members per 1000 connections, 1991-2002

Table 2: Non-revenue water for NWSDB and Colombo City as percentage of water produced.

Type of losses	Overall NWSDB	Colombo City
Leakages	23	25
Tenement gardens, standposts	4	15
Illegal connections	4	8
Metering errors	4	5
Total Losses	35	53

being done by the Board. It should be noted that the Board has been increasingly outsourcing more and more activities in recent years. It is thus not a new phenomenon for the Board, but continuation and acceleration of the current practice.

Probably the most important group of people in the Board that the water users are in regular contact with are the meter-readers. During the social and economic impact assessment of the projects, some households mentioned that they felt that there was some corruption in the meter-reading process. We cannot establish definitively the correctness or otherwise of this perception. However, the current practices of the Board, where meter-readers are given specific areas to cover consistently over a very long period of time, have not produced good results in other developing countries. Such territorial control by meter-readers often has resulted in increases in their unauthorised incomes, since for certain personnel, personal interest may override the overall public interest. In order to counteract the occurrences of such problems the meter-readers should be rotated very frequently in terms of the areas they cover, so as to ensure the potential of unauthorised incomes is significantly reduced, or even totally eliminated. For example, such very frequent rotations are practiced in Singapore, where corruption for meter reading has been virtually reduced to zero.

Based on the Centre's experiences in other South Asian countries, we estimate that the Board's income could probably be increased within the range of Rs. 225-Rs. 350 million by proper, accurate and efficient meter-reading. In addition, such transformations could be made within a very short period of only about 2-4 months.

It would, however, most likely to be a very difficult political process for the Board to change the current meter-reading practices, and change the territories of the meter-readers, who are highly organised and constitute an important political force. The meter-readers will in all probability resist such a move very strongly because of their own personal vested interests.

Accordingly, one realistic solution to improve the situation could be to outsource the meter-reading to the private sector. This would most probably mean that the overall cost of meter-reading will be reduced significantly because not only the number of meter-readers will be less, but also since the private sector is unlikely to pay the existing high salaries and fringe benefits that they currently enjoy.

In addition, the Board could provide an incentive to the private sector that they will receive a percentage of additional revenue that they may be able to generate from the existing consumers. If these proposed steps are applied, it is likely that the net benefit to the Board, in terms of additional revenue and reduced cost of the provision of meter services, will be in excess of Rs. 400 million.

There are many other activities that the Board could consider outsourcing to the private sector. Among these possibilities are:

- Leakage detection and repair;
- bill collection;
- new water connections; and
- vehicle maintenance and fleet management

All these activities, both individually and collectively, are likely to contribute to steady advances to both the economic sustainability of the projects and steady improvements in the financial performances of the Board.

Concluding Remarks

All the current experiences and future trends show that the private sector alone will not solve the water supply and wastewater management problems of the developing world in the future. In spite of the strong promotion of the private sector by most development banks, the fact remains that the public sector will continue to be the most dominant provider of water and wastewater services in the foreseeable future. It is highly unlikely that even by 2015, the private sector will provide these services to more than 15 percent of the world's population.

Accordingly, we believe that the main focus for the next decade should be how to improve the performances of the public sector water institutions very significantly and steadily. Within this overall framework, NWSDB of Sri Lanka has the potential to be a new paradigm for an institution that the developing countries can emulate. By any performance indicator, the Board has improved absolutely remarkably during the 1990s. There is no question that it has to improve its efficiency even more. However, the progress it has made during the past decade shows that given capable senior management and political will, institutions for urban water management in developing countries has the potential to successfully meet the water and wastewater management challenges of the 21st century. This is an important conclusion, especially as the public sector institutions are likely to remain as dominant players in this area for at least up to 2020, and possibly well beyond.

Acknowledgement

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