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Title	:	*Sustainable Water Supply and Sanitation Through Financing and Institutional Intervention: A Case from Kandy Sri Lanka*
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Background:

The National Water Supply and Drainage Board (NWSDB) and the Kandy Municipal Council (KMC) have jointly proposed a centralized Sewerage Treatment Plant (STP) for Kandy city. The main objective of the STP is to lower the pollution of Mahaweli River through adoption of improved wastewater management practices. The STP is a Rs. 14 billion project with an estimated Operation and Management (O&M) cost of Rs. 11 million per month (as per the estimates in the year 2007). The project will be implemented by the NWSDB and O&M will be handed over to the KMC. It has been proposed that the the O&M cost will be recovered from the users through increased water tariff.

This study conceptualized that, in achieving the Millennium Development Goals (MGDs) in Water Supply and Sanitation (WSS), the NWSDB and the KMC, while strengthening their institutional capacities, should also address the governance issues and cost recovery measures.

Objectives:

The objectives of this study are to:
(a) Assess the functioning of the main institutions involved in providing WSS services
(b) Investigate the costs and benefits of the proposed STP
(c) Propose an appropriate tariff mechanism for WSS services in Kandy city, and
(d) Investigate the governance issues pertaining to sustenance of urban WSS services.

Research Methodology:

This study investigated institutional capacities of the NWSDB and the KMC using primary and secondary data. The aspects studied included, financing, aid dependency, cost recovery, and capacity to operate and maintain the proposed STP by both institutions. The primary data was obtained through key informant interviews and group discussions. The economic viability of the STP was assessed using extended benefit-cost analysis. Two questionnaire surveys were carried out among domestic users in order to collect primary data on usage of water and their willingness to pay for sewerage treatment respectively. Information from questionnaire surveys were analyzed using econometric techniques such as multiple regression, simulation and choice modeling to determine the optimal tariff for WSS services. The governance issues pertaining to WSS services were critically reviewed and discussed in relation to the results of the previous exercises.

Research findings:

The results showed that the NWSDB is institutionally stronger, compared to the KMC, with highly motivated skilled staff who are technically qualified with wide experience in WSS. However, increasing proportion of foreign loans over local funds for development of infrastructure showed that the NWSDB is primarily dependent on foreign funds. High levels of loan interest, widening gap between the revenue generated and expenditure on development, consistent increase in O&M costs and the marginal decrease in Non Revenue Water (NRW), over the years indicate that there is an institutional weakening of NWSDB. The KMC on the other hand has many problems which include lack of funds for infrastructure improvements and rehabilitation along with inadequate human resources.

The existing tariff structure for water supply is too complicated and the simulation results showed that consumers do not respond to increasing tariff rates. This implies that tariff could be further increased to generate revenue to meet the O&M cost. However, this would have implications for the poor. The results also revealed that the removal of the subsidy from the consumers who use more than 20 m3 of water per month, while keeping the existing tariff rates, is a better approach to generate adequate revenue to meet the O&M expenditure.

It was also found that the Oxidation Ditch method of the proposed STP for sewerage treatment is not the best solution for the existing problem due to high establishment costs, high O&M costs and difficulties in establishing and maintaining a system of pipes in a populated and unplanned city with a difficult terrain. The proposed STP is not financially feasible at the proposed tariff rates by the NWSDB. The project becomes financially feasible only when the proposed tariff rates are increased by 190% and if all the residence in the city agreed to pay the extra sewerage tariff. The proposed STP becomes economically feasible provided if the huge environmental benefit anticipated is included in the analysis. The choice modeling exercise shows that the consumers prefer to have the option of connecting to the STP given to consumers themselves. People with higher incomes prefer that only the service recipients of the STP should pay tariff whereas the poorer segments are of the opinion that tariff should be paid by all households in the city. The majority of the households suggested that the management of the STP should be handed over to the NWSDB as it has the capacity to do so.

Discussion:

Equity and affordability were found to be crucial in addressing the governance issues pertaining to urban WSS. It was also revealed from this study that good governance is a mandatory requirement to cut down the unnecessary transaction cost of monitoring the consumption of WSS services. .As the drinking water policy clearly states, the system inefficiency of institutions should not be transferred to the consumers of the services through increased tariff.