Financial Resource Analysis of Urban Local Bodies: A Case Study of Bhopal City

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ABSTRACT *Urban areas are characterized by their concentrations of different economic activities. One of the main reasons why an industry or another economic activity concentrates geographically is because of the so called 'agglomeration economics' that it can enjoy. Exploring the positive factors of agglomeration economics, it is possible to exploit urbanization to aid economic development. Urbanization and Economic Development have long been recognized as concomitant factors. Policies need to be enunciated to use urbanization as a positive factor to aid economic development. The state has only limited resources. It can not disregard or neglect the social commitments. The possibility of additional state investment in this sector is too remote. The financial position of urban local bodies is also not too rosy.*

Over the years there has been a decline of local self government institutions in India in terms of inadequate devolution of powers and poor management and governance. There has been a complete lack of financial viability and sustainability of local self government institutions (ULBs). This has resulted in inadequate service delivery at ground level.

The urban local bodies are supposed to generate their own financial resources. However, these bodies do not often muster the courage to levy taxes under their powers. Inadequate taxation and inefficient management both render the municipal services far from satisfactory. The infrastructure development is not in a position to keep pace with the population growth of such cities resulting in serious inadequacies in service.

This piece of research work refers to ***"Financial Resource Analysis of Urban Local Bodies: A Case Study of Bhopal City"***

The research work analyses the Financial Resources available with BMC and the expenditures required to be met. For the purpose of the study, Bhopal town of Madhya Pradesh was chosen as the universe. It includes all the stakeholders of Bhopal Municipal Corporation i.e. the officers, public representatives, field employees and the customers

The research work has mainly relied on secondary data for the analysis. The secondary data particularly the historical data is collected from various sources e.g. Annual Budget document, Policy documents, Journals, Reports, Magazines, Newspapers, Books, BMC's website, Government Publications and Pamphlets and Brochures.

Keywords:

A. Introduction - Resource Management

In organizational studies, resource management is the the process of using a company's resources in the most efficient way possible. These resources can include tangible resources such as goods and equipment, financial resources, and labor resources such as employees. From BMC's (water services) view point, the concerned resources are water, human resource and financial resources.

B. RESEARCH METHODOLOGY

Objective of the study:

There is a great scope in undertaking research work in functional areas of Urban Local Bodies, but this study is confined to study ***"The Financial Resource Management of Bhopal Municipal Corporation with respect to Water Supply"***

Research Design

The **research design** is a detailed plan of how the goals of the study will be achieved. It not only anticipates and specifies the seemingly countless decisions connected with carrying out data collection, processing and analysis but it presents a logical basis for the study. An **exploratory research design** is most appropriate for the present study.

The **secondary data** particularly the historical data was also collected from the various sources mentioned below

1. Policy documents
2. Journals
3. Reports
4. Magazines

5. Newspapers
6. Books
7. Companies website
8. Government Publications
9. Pamphlets and Brochures
10. Other related websites

A detailed analysis of the information obtained from these documents was made to draw concrete conclusions.

C. Financial Resources in Water Sector

The income sources of BMC can be grouped under two major heads:

1) Revenue Income
2) Capital Income

Under the **Revenue Income** further heads are:

1. **Tax Revenue**: It consists of Property Tax, Water Tax, Conservancy Tax, Lighting Tax, Professional Tax, Advertisement Tax and other taxes.
2. **Assigned Revenues and Compensations:** It consists of taxes and duties collected by govt. , Duty on transfer of properties, Royalty, Compensation in lieu of octroi, passenger tax and other compensations
3. **Rental Income from Municipal Properties:** It includes rent from civic amenities, rent from lease lands.
4. **Fees and User charges:** This includes supervision charges, empanelment and registration charges, Licensing fees, fees for grant of permit, Fees for certificate or extract, Development charges, Regularisation fees, Other fees, User charges, Entry fees, Service/Administrative charges and other charges
5. **Sale and Hire charges:** It includes Sale of Products, Sale of Forms and Publications and Sale of stores and scrap
6. **Revenue grants, Contribution and Subsidies:** BMC gets revenue grants from State Govt., Najul Lagan, Grants on recommendation of State Finance Commission and finance commission, from basic amenities, PHED and DFID
7. **Income from Investments**: is in terms of the interest earned on fixed deposits.
8. **Interest Earned:** it is the interest earned on loans and advances to employees
9. **Other Income**: it includes the recovery from employees and other miscellaneous income

Under the **Capital Income** further heads are:

1. **Earmarked Funds**: includes Trust or Agency funds for example Pension Fund, GPF, Employee Welfare Fund
2. **Grants, contribution for specific purposes:** from Central Govt. , state Govt., other Govt. agencies, grants from International Organizations
3. **Secured Loans:** From state Govt., Central Govt., International Agencies and other loans
4. **Deposits Received:** from contractors/ Suppliers
5. **Deposit Works**
6. **Other Liabilities:** Creditors, Recoveries payable
7. **Loans, Advances and Deposits:** includes loans and advances to employees, employee provident fund loans, advance to contractors and suppliers.

D. Analysis of Financial Resources in BMC (Water Supply sector)

1) Capital Income (For Infrastructural Reforms)

Bhopal Municipal Corporation has received financial aid from various National and International agencies.

1. ADB (Project UDAY)

Table: 2.3 Financial arrangement of Project UDAY

S.No.	Description	Amount (Crores)
1	Loan from ADB	72.49
2	Grant from M.P Government	18.48
3	Contribution from Local Bodies	19.03
4	Contribution from UN Habitat	Training Assistance
5	Total	110

Source: Project UDAY project office Bhopal

2. JNNURM

As per the mission directions the ratio of investment for Bhopal by Government of India, State and the municipal body will be in the ratio of 50: 20:30. The total amount being spent under the project is approximately 100 Crores.

Table 2: Finances of JNNURM

S. No.	Description	Amount (Crores)
1.	Grant from Government of India	51.93
2.	Grant from M.P Government	20.77
3.	Contribution of BMC	Approx. 30

Source: Project UDAY project office Bhopal

3. MPUSP (Project UTTHAN)

It's a DFID aided project under which the financial aid is a total grant. The total cost of the project is 59 crores from which till date 20 crores have been spent. Since the project has a number of components, on eliminating other components, money spent on water is 2 crores.

Looking to the projects going on in Bhopal and the funds available for infrastructural reforms, we can conclude that there is no dearth of funds for infrastructural development.

2) Revenue Income: Working Capital Management

It is extremely essential for a firm to be able to meet its obligations as they become due. Current ratio is a financial tool which provides a quick measure of liquidity. The failure of a company to meet its obligations due to lack of sufficient liquidity, will result in a poor creditworthiness, loss of creditor's confidence, or even in legal tangles resulting in the closure of the company.

BMC has Current Assets from various sources which it uses to meet out its Current Liabilities i.e. the Operation and Maintenance charges. These include:

Table 1 BMC'S Sources of Income (Water Sector)

S.No.	Sources of Income/Current Assets	Amount in year 2010-11 (in Crores)
1.	Water Supply Maintenance (PHED)	6
2.	Water Connection Charges	0.12
3.	Water Tax / User charges	18
	Total	24.12

As per the Budget estimate of 2010-11 of BMC, the Operation and Maintenance charges i.e. the Current Liabilities were 46 Crores.

The Current Ratio is a measure of the firm's short term solvency. It indicates the availability of Current Assets in rupees for every one rupee of current liability. A ratio of greater than one means that the firm has more current assets than current claims against them.

For BMC, the Current Ratio is:

Current Ratio= Rs. 24.12 Crores/ 46 crores = 0.524:1

As a conventional rule current ratio of 2 to 1 or more is considered satisfactory. BMC has a current ratio of 0.524, which is extremely insufficient.

Here we see that the water supply maintenance contribution made by PHED and Water connection charges can not be augmented much. Only increase possible can be with the user charges. If we look at the Sources of Income, we find that increasing the water tax/user charges is one of the options to fill the enormous gap.

Poor O&M due to inadequate financial resources is one of the primary reasons for low sustainability and equity in water supply. The responsibility of operation, maintenance, and revenue collection is generally vested with the elected ULB, while the specialized bodies are not able to raise the water tariff without the approval of the provincial governments. The local bodies generally receive grant assistance ranging from 10% to 60% for capital works on water supply and sanitation from the State Government. Usually, they do not receive any grant assistance for O&M of water supply and sewerage.

Municipal bodies in many parts of the country suffer from inadequate resources. Assessment of demand and 'willingness to pay' by the communities would help to arrive at a basis for pricing water management services and to clarify the scope for adopting 'full cost recovery' policies to achieve financial sustainability.

E. Concept of User charges

Urban Local Bodies (ULBs) provide a wide range of civic and other infrastructure services to the citizens – basic services viz., water supply, sanitation/ sewerage, drainage, street lighting, roads and solid waste management, as well as other services viz parks, play grounds, crematoria, recreation centers, community halls etc. The mandate for the delivery of these services as well as the authority to recover costs associated

with them is also provided in municipal legislation. The recovery of Operation & Maintenance (O&M) costs incurred in the delivery of the services is not adequately planned in the current system and the user charges are not fixed on any economic/financial principles, which affect the financial self-sufficiency of services delivered.

Historically, the ULBs were dependent upon the benefit taxes and grants from State/ Central governments to meet the expenses. However, over a period of time, both tax resources and grant support remained either stagnant or had grown at a very slow pace. Yet, the responsibilities or functions of the ULBs had been increasing with ever increasing population and move towards decentralization. Although the authority to recover costs is also provided under the municipal legislation, the levy of user charges is neither adequately exploited to the potential nor integrated with the delivery of services. Consequently, there is a steady decline in the quality and quantity of service delivery.

One of the prime reasons for the poor state of urban infrastructure services is the inability of ULBs to adequately price the services that they provide to the users of civic infrastructure. The issue of recovering costs adequately in order to sustain urban infrastructure services has received some attention in the recent years, as the cost of producing these services is no longer easier and cheaper. To this background of the provision of municipal services is increasingly becoming costly, the municipal revenues are increasingly becoming inadequate to meet with the costs adequately, which has been resulting in the neglect of service and maintenance of asset. The decline of asset results in poor service and unwillingness to pay that further deteriorate asset formation.

In several municipalities, civic infrastructure projects meant for the provision of civic services have been running at loss for years because they are not only failing to recover the capital investments but also failing to generate enough revenues from services to finance even operations and maintenance (O&M) costs of the services. In summary, these result in the formation of a vicious circle of poor civic infrastructure and inadequate cost recovery, thereby perpetuating the decline of infrastructure asset service life, quality and coverage. As noted by Bahl and Linn (1992), user charges on public services are appropriate instruments when benefits are measurable and beneficiaries are identifiable.

The situation referred above is also attributed to the lack of commercial orientation of the municipalities towards the services that they provide. Even if an urban infrastructure project is unable to recover the capital costs initially, it should be able to generate enough revenues to fund its recurring costs of O&M. Therefore, it is important that the local government (or the municipality) shall levy user charges appropriately to recover the costs to local government or its agencies so that the resources mobilized are adequate to meet the expenditure commitments.

The primary rationale for the levy of user charges to adequate levels is to provide financial stability and effective recovery of all costs associated with a particular civic urban service. Such financially viable user charges may even generate resources for expanding or upgrading the service. User charges facilitate efficient investment decisions and better delivery choices. This is often referred to as `efficiency pricing' as it allows an efficient allocation of resources.

User charge enables the civic authorities to provide these services from a demand perspective i.e., the authorities will respond to demand by providing appropriate service with the costs being fully recovered. They discipline people at large since policies can be framed in such a manner that they can discourage any wastage of Municipal Infrastructure Services.

User charge can also be used as a redistributive mechanism (or, cross subsidization) in order to address some of the social/economic issues like concerns of the poor. The pricing policies were not seen as an instrument of redistribution *per se* but now user charges can be made non-regressive by using either differential or progressive tariffs or through means testing, with reduced tariffs or exemptions for the old and the poor (implicitly using cross-subsidization principles). User charge enables allocative efficiency, i.e., by fully recovering the operational costs of the municipal infrastructure service, the government or government agency does not consume resources meant for other services or sectors. In essence, the rationale for the levy of user charges is not only to generate revenues but also to promote economic efficiency. Implicit in this line of argument is that the ULBs have adequate capacity (organizational, technical and manpower) to provide these services.

F. Best Practices in User charges Collection in the world

In most South Asian cities today, public sector agencies are struggling to provide adequate water supplies to their customers. Municipal bodies, supposedly in charge of service delivery, are caught in a downward spiral of disrepair and appear to be in no position to meet increasing demand or maintain the standards.

Inefficiency, low investment levels, a lack of financial viability and an absence of customer orientation mean that customers face an inadequate and unreliable supply of low quality water.

Following are the summarized practices in urban water pricing in various countries and cities. Countries like Australia, United Kingdom and city of Metro Manila have been selected due to diversity of experience in institutional/regulatory/pricing regime in water sector in these countries.

1) United Kingdom (UK)

The water industry in England and Wales has developed over the last century: from small organizations serving local communities to large integrated companies in private ownership, overseen by a government regulator, namely The Water Services Regulation Authority or more commonly known as OFWAT.

Before 1973 the water and sewerage industry in UK had a highly fragmented structure, mainly organized on local basis. The 1973 Water Act reorganized the industry and established ten state owned Regional Water and Sewerage Authorities (RWAs) responsible for water supply, sewerage and environmental services. Moreover, 29 privately owned water only companies (WOCs) supplied water within the boundaries of the RWAs.

Table 6.4: Responsibilities of provision of water services in UK

Region	Water Supply	Sewerage
England and Wales	10 water and Sewerage Companies and 29 Water Only Companies (WOCs)	Water and Sewerage Companies
Scotland	Water Authority	Water Authority
Northern Ireland	Departmental Water Service	Departmental Water Service

Source : Peter Bailey, 2002

The reform process began with the privatization of RWA's. The government considered that more efficient management could obtain important savings, and this would best be achieved by private sector. In 1989, the government decided to privatize the whole sector without modifying its structure. This included 10 Water and Sewerage companies (WACs) and 29 Water-Only Companies (WOCs).OFWAT was set up, whose duty was:

- To promote the public interest and provide the correct economic incentives to the industry.
- Make sure the companies provide customers with a good quality, efficient service at a fair price
- Limit the prices companies can charge and make sure that bills are kept as low as possible
- Monitor the companies' performance and take action, including enforcement, to protect consumers' interests
- Set the companies challenging efficiency targets
- Make sure companies deliver the best for consumers and the environment in the long term
- Encourage competition where it benefits consumers

Before privatization there were a lot of problems:

- Increasing leakage
- Lack of investment
- High industry debt
- Less efficient companies
- Neglected infrastructure
- Taxpayers unwilling to spend more
- Little incentive to improve service
- Drinking and river water failing quality tests
- Lower compliance with environmental standards
- Political interference

Water Industry Act 1999 defined roles and responsibilities of water companies. For all the Water and Sewerage companies in UK it became mandatory to get their proposed water charges to be approved by OFWAT. It led to the creation of regulatory bodies namely OFWAT, DWI and EA.

The major achievements of this change have been many, to name a few:

- ✓ Leakage has fallen by 35% since peak in 1994-95
- ✓ Network is functioning better – more companies have stable serviceability than ever before
- ✓ £90 billion has been invested. Companies are more efficient– bills are 30% lower than they would have been

- ✓ Water and environmental quality has improved – over 100 Blue Flag beaches and fish in the Thames again
- ✓ Customer service is significantly better – only 6,620 properties (0.03%) are now at risk of low water pressure, compared with 344,259 (1.6%) properties in 1990-91

Water companies in UK charge water tariff based on whether the property is metered or unmetered. Price reforms have led to higher prices along with consequential fall in water consumption which has eventually resulted in lower water bills for consumers.

2) Australia

Australia's urban water industry comprises approximately 300 utilities where a majority i.e. 70% of population is serviced by 26 utilities.

There is a large variation in institutional framework in water sector across different states of Australia. For instance in Victoria both whole sale and retail water businesses[1] are government controlled whereas in New South Wales and Queensland, local authorities control the small retail water business and rest is controlled by government.

The nature of ownership arrangements for urban water businesses has changed over time, with an increasing preference for corporatization of government owned businesses which provides a more commercial focus for operations and operates at arms length from government.

In some cases urban water authorities are vertically integrated suppliers for an entire state or regions (e.g. SA water) wherein the utility undertake wholesale and distribution/retail functions, while in some states such as Queensland urban water services are provided at local government level. The central body for urban water supply authorities is the Water Services Association of Australia (WSAA).

There are different decision makers who determine the water charges in Australia. These may include government, ministers, economic regulators and local governments.

There are various statutory instruments under which decision makers determine water charges. The transparency and accessibility of those powers vary from statutory law to, guidelines, to by laws, to individual water business decisions.

There are also variations in applications of pricing principles set under statutory instruments. For e.g. in some states it is not mandatory to follow regulators advice on water charges whereas in other states it is a legal requirement to follow a set of pricing principles as set by an economic regulator.

The first step in the water charge setting mechanism is the assessment of revenue requirement of the water utility. The Australian water companies use a building block approach for assessing their revenue requirement. Once the revenue requirement is defined, the next step is to assess how to recover the costs from the users. For this, a structure of tariff charge is devised. All states in Australia use a combination of fixed and variable charges for passing on wholesale and retail water charges in urban areas.

The price reforms have helped in improving financial sustainability of utilities as well as conserving of water. Further consumption based pricing rather than property value based pricing, has given consumers the correct signal to control their water bills and hence help in conservation of water. Moreover the regulatory structure has helped in improvement of standards of services regularly over years.

3) Manila (Metropolitan Waterworks and Sewerage System Regulatory Office-MWSSRO)

The urban water supply and sewerage management in Metro Manila is regulated by the Metropolitan Waterworks and Sewerage System Regulatory Office (MWSSRO). The reform process began in 1997, with the acceptance of the Public Private Partnership (PPP) mechanism by the government , in the form of a concessionaire model, resulting in improved service standards and efficiency, increased coverage (Both area-wise and time-wise), reduction in government's debt burden, along with a more transparent water pricing mechanism.

Till 1995, water sector in Metro Manila was characterized by poor coverage of water supply and sewerage area (67% and 8% respectively), high tariff rates, low water availability (16 hours/day), high government debt burden and inefficient management. There was an urgent need to tackle the water crisis and subsequently checking its adverse impact on health and well being of the population, food production and industrialization process. This initiated the Water Crisis Act, 1995.This paved the way for private sector to join in for growth and development projects related to water supply and sewerage services. A PPP model was adopted which provided for concessionaire agreements (CAs) to be awarded by the MWSS for each of the two zones of Metro Manila- East Zone and West Zone, with two sets of private consortia individually, for managing the water supply and sewerage services. The 25 year CA was to be provided on the following basis:

- Bidding mechanism to be followed wherein the bidders have to bid for both areas. But no bidder can win both areas.

- Specific targets have to be achieved on coverage for water sanitation, 24-hour supply, and quality.
- A consortium of local private operators must have an international operator as partner having at least 20% stake in the consortium.
- The awarding of CA was based on lowest tariff submitted.
- The winning bidders shall have to reimburse Government $6 million transaction cost.
- The government's (MWSS) debt burden of $ 900 million was to be paid by concessionaire

The MWSSRO functions under the close jurisdiction of the MWSS Board of Trustees. There are 4 prime areas of regulation, each headed by a regulator, and a chief regulator acting as the chairman of five member committee. The 4 areas of regulation are Technical, Customer Service, Financial, Administration and Legal Affairs.

The tariff comprises of basic charge, CERA, FCDA, EC, SC, MSC, penalty charge and VAT.

This is a successful case study of inclusion of privatization in water sector. Pricing reforms have aimed at recovery of full costs including the operating costs, capital recovery costs as well as return on investments.

G. New initiatives in User service charges in India

There are a variety of institutional arrangements in the provision of urban water in India. For e.g. some cities in India have set up city level water boards for water services and sanitation like Bangalore, Chennai, and Hyderabad ; while Delhi , Gujarat, Punjab, Tamil Nadu have set up state level water supply and sewerage boards. Further no national level independent regulatory body exists in water sector. There is a brief review of the present pricing practices for urban water adopted by various Indian cities, namely Ahmedabad, Bangalore and Delhi.

1. Ahmedabad

Ahmedabad Municipal Corporation (AMC) is responsible for supply of water to urban consumers in the city. Approx. 85% of the city's water supply needs are serviced through AMC.AMC sources 90% of its water through Narmada Canal Development Scheme, while remaining 10% is met through ground water. Water treatment is carried out by state owned treatment plants. AMC owns 96 water distribution stations from where water is distributed to individual consumer households. AMC is also responsible for revenue functions of water supply in the city i.e. billing and collection and operation and maintenance tasks. Capital works are usually carried out by the State Government through Public Health and Engineering Department (PHED) and are funded through central or state grants/subsidies.

A separate Gujarat Water Supply and Sewerage Board exists at state level in Gujarat, i.e. (GWSSB). GWSSB's is responsible for developing water supply and drainage projects in rural areas and assisting municipalities in small urban centers and plays no role in water supply in city of Ahmedabad. Further no independent regulatory authority exists at either city or state level. GWRRA bill has been drafted but lacks consensus politically.

AMC charges water at a flat rate. In 2008-09, AMC linked water and sewerage charges to property tax. According to this, annual water tariff would be 30% of the property tax payable by an individual consumer.

The tariff is fixed without consideration of costs involved in the provision of water supply and sewerage services. The major part of the cost incurred goes in to O&M costs. These include establishment expenditure, electricity costs, chemical costs, Administrative and general expenses, repair and maintenance expenses and bulk water procurement charges. Electricity costs constitute approx. 60% of total O&M costs of AMC, while the capital costs include expenditure on laying transmission pipes, buildings, pumps etc. are neither accounted while setting tariffs nor recovered through water tariffs. Most of these costs are directly borne by the State government through grants, subsidies, etc.

AMC believes that since collection of property tax is one of its key functions, linking water tariffs with it will also improve collection efficiency
of water charges and make the task easier.

Further property tax is charged for all type of households' i.e. upper income to lower income households as well as slums. For example, AMC charges lower property tax and subsequently lower water tariff from poor households as compared to upper income households depending on the size of their properties, income levels etc. This automatically takes care of the issue of equity and fairness in design of tariff.

In year 2008-09 AMC has been able to recover 60-65% of its O&M expenses. AMC expects to recover greater proportion in the future. With increase in property tax rates, revenue from water charges will automatically increase. AMC is also taking steps to reduce its operating costs by use of more energy efficient technology & regular energy audits; hence better cost recovery in future is possible.

However AMC's pricing policy has certain issues which need to be addressed:

1. Water charges recover only a part of O&M costs and do not cover the capital costs or costs of future expansion.
2. The actual level of consumption by consumers is not known as metering is negligible, which has an ill effect that the actual level of losses in the system can not be known.

2. Bangalore

The unique feature of Bangalore case-study is the highest level of domestic metering.

The Bangalore Water Supply and Sewerage Board was set up in 1964 under the Bangalore Water Supply and Sewerage Act 1964.All the water and sewerage related assets of the Bangalore city were transferred to the Board on its establishment. The Board is responsible for source management and distribution of water in the city. It is responsible for both O&M and Capital works. The sources of water supply are Cauvery, Arkavatty-T G Halli and Hessarghatta rivers. The board has approx. six lakh consumers.

As per BWSS Act, the board is allowed full cost recovery (at no profit no loss basis). The city has very high level of metering (board claims 100% metering and collection efficiency of 99%) and the city charges volumetric tariffs. Consumption is metered at both the supply end and the consumer end. Losses are about 50%.

The main categories of cost are: power consumption, establishment, R&M, A&G and depreciation. No charges for bulk water as the source is owned by the board.

Breakup of costs involved in water provisioning of BWSSB,

Table 6.5 Water Provisioning Costs of BWSSB

Cost Components	% of Total
Establishment	20.1
Electricity	59.5
Chemicals	-
General Repairs	7.6
Raw water	-
Interest payments	12.8
Others	-
Total	100

Source : K.S.Sridhar and O.P. Mathur. 2009

The per unit cost of water is Rs.12.98 per kl while the average cost recovery through tariffs is Rs.13.79per kl. For any tariff review, a proposal is prepared by the board , submitted to the councilors for voting and sent to the government for its approval. General revision of rates is undertaken every three years. Hike in electricity price directly results in increase in water prices.

3. Delhi

The urban water supply and sanitation in the National capital Territory (NCT) OF Delhi is the sole responsibility of the Delhi Jal Board (DJB).DJB was established by the Delhi Water Board Act 1998 passed by the parliament, and the earlier fragmented divisions of Delhi Water Supply and Sewerage Disposal Undertaking were incorporated jointly to form DJB. The Board acts as the para-statal authority for all the capital works, operations and maintenance and revenue functions related to water supply within the NCT of Delhi.

DJB is responsible for retail distribution of water in the areas under the Municipal Corporation of Delhi (MCD), while it supplies only bulk water to areas under New Delhi Municipal Corporation (NDMC) AND THE Delhi Cantonment Board. DJB serves 90% of its demand through surface water from Yamuna River while remaining is sourced through ground water. It also carries out all the functions related to distribution of retail water in urban areas including capital works, O&M and revenue billing and collection.

DJB is an autonomous body carrying out all the functions of urban water supply and sanitation but most of its members are elected representatives from government itself and hence the state government is directly involved in the boards functioning, for example as per section 55 of the DJB Act, the board has the power of levying fees, charges, including development charges, rentals, etc. and recovering them for the services rendered by it. However any change or hike in tariffs has to be approved by the State Government.

At present, water is charged based on two –part pricing model operating on a cost plus basis. The main components of tariff charge consists of fixed connection charge, volumetric charge, 50% of consumption charge is levied towards sewage maintenance, annual increment of 10% on fixed connection charge, Bulk water charge etc.

In 1997-98 there were huge amount of losses ranging between 66-84%. Main reasons analyzed were:

1. The water tariffs do not reflect the actual costs

2. Huge amount of subsidies are being given out to consumers through tariffs
3. Metering is not adequate
4. Low collection efficiency
5. High water losses

In order to revive DJB'S finances, on 1st December 2009, the Delhi government decided to hike water charges from 1st January 2010. The new tariff structure would gradually do away with subsidies and reflect true costs.

H. Key Findings from National Case Studies:

- The price of urban water is low in relation to the cost that is incurred on its provision
- Arbitrary pricing structures without basis and strong political influence
- Under pricing has resulted in poor services and reduced incentives to expand the spatial coverage of services
- The objective of large scale subsidization of water on grounds of lack of affordability by the poor has not been achieved
- Under pricing has adversely affected the finances of state governments
- Inefficiencies in water pricing.

I. Findings and Observations

BMC has Current Assets from various sources which it uses to meet out its Current Liabilities i.e. the Operation and Maintenance charges. As per the Budget estimate of 2010-11 of BMC, the Operation and Maintenance charges i.e. the Current Liabilities were 46 Crores and As per table 6.3, the total Income under the water supply head is 24.12 crores.

For BMC, the Current Ratio is:

Current Ratio= Rs. 24.12 Crores/ 46 crores = 0.524:1

As a conventional rule current ratio of 2 to 1 or more is considered satisfactory. BMC has a current ratio of 0.524, which is extremely insufficiently liquid.

The objective of the research to study the Financial Resource Management of Bhopal Municipal Corporation with respect to Water Supply has been studied and it can be concluded that BMC has insufficient resources (current assets) to meet out its current liabilities in the water supply sector.

Further we see that the water supply maintenance contribution made by PHED and Water connection charges cannot increase beyond a point. The only recourse available is the user charges. If we look at the Sources of Income, we find that increasing the water tax/user charges is the only option to fill the enormous gap.

This completes the objective of the research, the utility of User Charges in water supply sector and it can be concluded that User Charges are inevitable and the only solution to manage the water supply efficiently is by raising the user charges.

J. Conclusion

Bhopal Municipal Corporation has received financial aid from various National and International agencies including ADB, DFID, GoI etc. Poor O&M due to inadequate financial resources is one of the primary reasons for low sustainability and equity in water supply. The responsibility of operation, maintenance, and revenue collection is generally vested with the elected ULB, while the specialized bodies are not able to raise the water tariff without the approval of the provincial governments. The local bodies generally receive grant assistance ranging from 10% to 60% for capital works on water supply and sanitation from the State Government. Usually, they do not receive any grant assistance for O&M of water supply and sewerage.

Municipal bodies in many parts of the country suffer from inadequate resources. Assessment of demand and 'willingness to pay' by the communities would help to arrive at a basis for pricing water management services and to clarify the scope for adopting 'full cost recovery' policies to achieve financial sustainability.

The primary rationale for the levy of user charges to adequate levels is to provide financial stability and effective recovery of all costs associated with a particular civic urban service. Such financially viable user charges may even generate resources for expanding or upgrading the service. User charges facilitate efficient investment decisions and better delivery choices. This is often referred to as `efficiency pricing' as it allows an efficient allocation of resources.

K. Recommendations and Suggestions

Efficient Resource Management

a) While doing the financial resource analysis of BMC it was found that the income from various sources is just half of the O & M charges.

i.e Current Ratio= Total income from various sources/ O & M charges

= Rs. 24.12 Crores/ 46 crores = 0.524:1

There are few ways to improve the situation:

a) By Increasing the User Charges.

The existing water (connection) charges and water tariffs are highly subsidized. Revisions of water charges and water tariff have remained indifferent to the inflation rate. Quite often, the State governments, being the guarantors of loans received from the financial institutions for implementation of water supply systems, come to the rescue of the state level agencies for repayment of loans and the water tariff structures intended to be revised remains untouched due to various socio-economic and political reasons.

The present research study reveals that 98% of the customers are willing to pay for the improved services; similarly the people's representatives strongly expressed their willingness to charge the public, but for improved services.

Cashing on this win -win situation, all BMC stakeholders should now take the call of the situation.

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