CHAPTER V

LEGISLATIVE MEASURES IMPLEMENTED BY THE KERALA STATE GOVERNMENT IN PROVIDING SAFE DRINKING WATER.

Introduction

The state of Kerala is blessed with abundant rainfall with two predominant rainy seasons. The annual replenished ground water resource is estimated at 7500 mcm. Traditionally most of the people in Kerala depend on open wells in their homesteads for meeting their domestic water requirements. About 80% of the population in rural areas and 50% of the population in urban areas depend on open wells for meeting their water requirements.

Kerala has been experiencing severe drought conditions and drinking water shortages every summer for the past few years for several reasons. Improvement in the general standard of living of the population has led to the increase in water consumption and promoted wasteful usage of water. Unscientific and unregulated sand mining activities in the river beds have led to large scale reduction in ground water resources. The potential of ground water recharge is also limited due to the topography of the state which facilitates rapid runoff and minimum retention. Not only wells but also water supply schemes from surface water resources in the lower reaches of rivers in this zone are prone to the threat of salinity.

Access to safe drinking water is a basic human right. As water is a common heritage having economic value the responsibility for its regulated use and conservation is vested in every citizen and community. The ownership of water resides with the state
as a public owned resource with entitlement for individuals, communities and service provider to water without owning it.

The operation and maintenance of drinking water schemes need constant improvement and modernization of distribution work, treatment technologies and optimization of delivery. The technical support of integrated water resource planning is highly inadequate at the level of local self government. This is a major handicap which prevents the users from involving and owning water related projects and schemes. The ‘polluter pays principle’ is enforced only in the case of industrial dischargers in minimizing the contamination of surface and ground water resource. The same approach need to be extended to other sectors also. Government shall be guided by the realization that water as a community resource should be primarily utilized for the public benefit and individual’s interest shall not be allowed to take precedence over public interest.

According to an estimate made in 2009 piped water reaches 79% of the urban population and 58.7% of the rural population in Kerala. The rest of the population depends on open wells, ponds, natural streams etc., for meeting their water requirements. A survey on the status of the water supply in rural areas of the country conducted 2005 showed that of 9763 panchayats in Kerala, 7615 partially covered habitations and 2112 fully covered habitations. There exist 1858 rural water supply schemes and 58 urban water supply schemes.

**Legislative measures**

An initiative has been taken by the Central Government in drafting model legislation on regulation of potable drinking water in the country along with other aspects like standard setting mechanism, phasing of implementation and implication on
Centre and State. Taking this into consideration the Kerala Government has promulgated the Kerala Water Supply and Sewerages Act, 1986 leading to the establishment of Kerala Water Authority, a governmental organization to deal with water supply and areas connected with it. In 1991, the Kerala Water Authority (Water Supply) Regulation Act, was formulated to deal with aspects like connection, disconnection etc., Besides the Kerala Government has formulated Kerala State Water Policy, 2007 for conservation and management. As per the latest Kerala State Statistics (2011-2012), as on 31.3.2012 about Drinking water Supply conducted by the Ministry of Drinking Water and Sanitation, Government of India, there are 11882 habitations fully covered under the rural water supply programme. 1.96% of the Kerala population favour in having new water supply schemes and about 50% of the Kerala’s urban population depend on ground water for their needs.  

The Kerala Water Supply and Sewerages Act, 1986 was for the establishment of an autonomous body for the development and regulation of water supply and waste water collection. The Act replaced the Kerala Water and Waste Water Ordinance, 1986. The Act has been amended by (1) The Kerala Water Supply and Sewerage (Amendment) Act, 1993 under which Government has appointed an accounts member in the Kerala Water Authority to provide leadership and guidance to the staff in all financial and account matters and to empower the government to retransfer the water supply and sewerage services to the local bodies which have their own electricity distribution system as per Sec.18A of the Kerala Water Supply and Sewerages Act, 1986 and (2) The Kerala Water Supply and Sewerage (Amendment) Act, 2008.
At the time of promulgation of the Act 1986, only about 42% of the rural and 70% of the urban population of the state has been provided with protected water supply\textsuperscript{1d}. Life Insurance Corporation which is the financial agency providing loan assistance for the urban and rural water supply schemes in Kerala has been pressing the State Government for a long time to constitute an autonomous water supply and sewerage board to cover entire water supply and sewerage sectors in the state. It was therefore considered expedient to establish an autonomous authority namely, Kerala Water Authority for the state of Kerala in order to give a forward thrust to the development and regulation of water supply and waste water collection and disposal in the states and the matters connected therewith.

**Water Supply schemes in Kerala**

Various schemes are being implemented by the Kerala Water Authority for extending the coverage of protected water supply in the state. These include schemes funded from Plan funds of the state, Accelerated Rural and Urban water Supply Schemes (ARWSP) sponsored by the Government of India, Technology Mission Schemes, Schemes approved under the XI Finance Commission and Schemes with loan assistance from the financial institutions like LIC, HUDCO and NABARD.

*Accelerated Rural Water Supply Programme (ARWSP)*

Until the beginning of Third Five Year Plan, drinking water supply in rural areas formed a major component of the Community Development Programme. In 1954, Ministry of Health of GOI implemented the National Water Supply and Sanitation Programme. AARWSP a scheme sponsored by GOI was launched in 1972-’73 in order to provide safe drinking water to areas identified as ‘difficult’ and ‘problem villages’ by an
assessment survey conducted in 1972. The GOI provided funds to states for making provisions of safe drinking water in rural habitations. Projects and schemes on sustainability of sources could also be taken up under this programme for Rain Water Harvesting, artificial recharge, revival of traditional systems etc., Certain proposition of ARWSP funds were set aside for implementation of sector reforms project for institutionalizing community participation in rural water supply programmes.

*Accelerated Urban Water Supply Programmes (AUWSP)*

This programme was initiated in 1993-'94 by the Government of India to provide safe and adequate water supply facilities to the entire population of towns having the population of less than 20000 according to 1991 Census. Priority is given to towns with very low per capita supply of potable water, very distant or deep water sources, excess salinity or fluoride, high incidence of water borne diseases and drought prone areas.

*Technology Mission Schemes*

In 1986, during the VII Five Year Plan period, the rural water supply component of the state sector and the ongoing centrally sponsored ARWSP were brought together into the Technology Mission of drinking water and Related Water Management (also called National Drinking Water Mission (NDWM) with a view to increasing the coverage of problem villages under the Technology Mission Strategy. NDWM was renamed as Rajiv Gandhi National Drinking Water Mission (RGNDWM), 1991. Further in order to attain the goal of providing safe drinking water to all rural habitations in the country within 5 years in consonance with the National Agenda for Governance of the
Government, a Department of Drinking Water Supply was created under the Ministry of Rural Development in December 1999.

The main objective of the mission are to cover residual non covered, partially covered and quality affected rural habitations, evolve appropriate technology mix, wherever required, improve performance and cost effectiveness of ongoing programmes create awareness on the use of safe drinking water and take conservation measures for supply of safe drinking water.

Water Supply Schemes to rural schools.

Kerala Water Authority is implementing water supply schemes to schools in rural areas. 50% of the expenditure is met from ARWSP funds and the remaining from the state plan funds. Out of 355 school projects taken up under this scheme, 86 were provided with water supply by 2002-2003. The remaining work is in progress.

LIC Aided Schemes

Rural and urban water supply schemes have been under implementation with financial assistance in the form of loans from LIC since 1967-'68. An amount of Rs.319.57 crore has so far been received from LIC for financing the water supply sector, 278 water supply schemes have been completed with LIC Assistance. Now there are 30 rural water supply schemes and 41 urban water supply schemes under different stages of implementation with LIC assistance. They include 19 new rural and 8 new urban schemes sanctioned by LIC during March 2008.

Rain Water harvesting and Jalavahini

It is estimated that piped water has reached about 79% of the urban and 58.7% of the rural population in Kerala. The state government has formulated three drinking
water schemes i.e., Varsha, the Rain water harvesting Scheme, Jalavahini which seeks to sustain and maintain conventional sources of water for meeting local needs and the ongoing Jalanidhi, the scheme involving panchayat level ventures developed and maintained by the local people themselves. The Government of Kerala intends to achieve the ambitious ‘Water for all’ by 2012. The implementation of Varsha is done with the active involvement of local community. Several small and isolated initiatives in water management have been launched at different places within the state following the droughts in 1983 and 1987, mostly at individual, household and NGO levels.

The major objective of rain water harvesting campaign is to sensitize stakeholders of the seriousness of water scarcity looming over the state, to disseminate knowledge on existing rain water harvesting, to prepare for large scale adoption of rain water harvesting in the state of Kerala and to establish a Rain Centre at Trivandrum for promoting rain water harvesting and ground water recharge measures.

*Scheme under Japan Bank of International Corporation Assistance (JBIC)*

A package of five major water supply schemes was approved by the Overseas Economic Cooperation Fund (OCEF) of Japan for loan assistance for a projected population of 9.39 lakh in 2021 within the Trivandrum city limits and six neighbouring panchayats, the ultimate water demand is expected to be 285MLD as against the present supply capacity of 203 MLD.

*Decentralization in Rural Water Supply and Jalanidhi*

Until a few years ago, Kerala Water Authority was the sole agency for execution of water supply schemes, distribution of drinking water and maintenance of water supply schemes throughout the state. The centralized system of water supply is
ineffective in rural areas where provision of water through house connection involve high networking costs.

As a result, the Government of Kerala launched a people’s planning campaign as an instrument for decentralized planning in July 1996. In order to bring in people’s involvement in planning and implementation of schemes for mitigating the inadequacy of coverage of drinking water supply in several rural areas of the state, the Government decided to permit local bodies to take up drinking water supply schemes and issued orders in March 1998 stipulating procedure for implementation of certain types of water supply schemes by local bodies.


The Kerala Rural Water Supply and Environmental Project implemented under Jalanidhi Scheme aim at improving water supply and sanitation services for about 1.5 million people, specifically targeting the poor and the disadvantaged communities. Jalanidhi is a demand driven project, conceptualized planned and implemented by users themselves as against the conventional top down approach. This will be owned, operated and maintained by users themselves on a total cost recovering basis. The project assists local and state level public agencies to shift the focus from direct service delivery to the supporting of community groups in planning, constructing and operating piped water supply and environmental sanitation systems. While many of the government sponsored
water supply schemes have turned into bad assets because of the neglect by the general public, in the ‘Jalanidhi’ scheme, the beneficiaries are participant stake holders and therefore they ensure that the entire project is conceived and implemented economically and managed efficiently.

Community owned and operated water supply systems

There are also a few cases of water supply systems built, owned and operated by non governmental organizations and voluntary agencies (Olavanna, Pazhakulam). The scheme in Olavanna grama panchayat in Kozhikode District has attracted considerable attention even at international levels. The Grama panchayat commissioned the first piped water supply scheme in 1987 in its Vettuvedankunnu ward to serve 400 households using funds from Government grants to the block panchayat. Kerala Water Authority too commissioned two schemes in 1990 and in 1998 serving 2400 households.

Table 5.1
Scheme details as on 31/3/2012\(^{1g}\)

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Particulars</th>
<th>State No.</th>
<th>State %</th>
<th>India No</th>
<th>India %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Habitation covered under PWSS</td>
<td>10047</td>
<td>84.55</td>
<td>296232</td>
<td>17.80</td>
</tr>
<tr>
<td>2</td>
<td>Habitation covered under handwells/ bore wells</td>
<td>81</td>
<td>0.74</td>
<td>873503</td>
<td>52.49</td>
</tr>
<tr>
<td>3</td>
<td>Habitation covered by others</td>
<td>138</td>
<td>1.16</td>
<td>28160</td>
<td>1.69</td>
</tr>
<tr>
<td>4</td>
<td>Habitations where scheme detail not entered in</td>
<td>1610</td>
<td>13.55</td>
<td>446410</td>
<td>26.82</td>
</tr>
</tbody>
</table>
Public water supply systems being an inevitable component of infrastructure required to attain developmental objectives has to keep pace with growth in demand for water. According to the ‘requirement approach’ water demand in an area is estimated based on the per capita requirement of the population. The ‘demand curve approach’ takes into account economic factors that influence demand for water such as price of water and income of the consumers and losses in the distribution system. KWA the major agency in the water supply sector in Kerala follows this approach for estimating water demand.

Although the present level of production of water through piped water supply schemes in the state is estimated to be approximately 1008 MLD there is wastage due to leakage and losses including theft, which limits the present effective supply of approximately 800MLD, as against a demand of approximately 2900MLD. Thus at present there is a huge demand supply gap. Another disturbing feature is in the huge quantum of losses occurring in transmission. For bridging the demand-supply gap, scientific assessment of requirements and estimatum of capital investment are required.

Table 5.2

Trends in the Percentage of Population Covered by protected Drinking water Supply in Kerala

<table>
<thead>
<tr>
<th>Years</th>
<th>Population (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>Urban</td>
</tr>
<tr>
<td>1960-1970</td>
<td>17</td>
</tr>
</tbody>
</table>
Table 5.3
Details of water supply schemes completed in different years in Kerala

<table>
<thead>
<tr>
<th>Years</th>
<th>Number of Schemes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956-1961</td>
<td>40</td>
</tr>
<tr>
<td>1961-1971</td>
<td>71</td>
</tr>
<tr>
<td>1971-1981</td>
<td>683</td>
</tr>
<tr>
<td>1981-1991</td>
<td>1509</td>
</tr>
<tr>
<td>1991-2001</td>
<td>1855</td>
</tr>
<tr>
<td>2001-2011</td>
<td>2069</td>
</tr>
</tbody>
</table>

Even though there are various schemes implemented by the Kerala Government for the supply of drinking water in sufficient quantity and quality, many schemes do not meet the demand and aspiration of the users in term of the adequacy of quantity, quality and reliability of water. Infact the coverage of the water supply is through stand posts. Due to lack of community ownership of public stand posts and the indifference of service provided, wastage and poor maintenance is quite common in rural and urban areas. Also cost recovery is extremely low since the users do not pay the municipalities and Grama
Panchayats for the services rendered in providing water supply and the Authorities itself make default in collecting taxes and amount from the beneficiaries. A key issue underlying this situation is that community consultation and participation in the planning and implementation of these schemes by the Kerala Water Authority is very low. As a consequence Kerala Water Authority schemes overlook the fact that private wells are traditionally used as the primary source of drinking water and the piped water is a viable option only if it is a means of service in the form of private household connection and only if a reliable quality of water is supplied.

Kerala State Water Policy, 2007

The Kerala Government has promulgated a Kerala State Water Policy, 2007 to deal with water conservation and management. The main objectives of the policy are:

1. Adopt, integrated and multisectoral approach for planning, development and management of water resources

2. Consider micro water sheds as the basic unit for the conservation and optimal utilization of water resources for achieving resource sustainability.

3. Integrate the problem and prospects of water resource system by considering river basin as a basic unit.

4. Emphasize the importance of comprehensive water shed conservation and management plan, long term sub basin and river basin operation and monitoring plan and state water resource plan.

The policy gave priority to drinking water by assuring quality and free from pollution.
The Kerala Government has promulgated an Act to reduce the misuse of water in the State. The Act is mainly formulated to reduce the misuse of water, unauthorized water connection, if water is used for non domestic purposes after claiming the connection for domestic surfaces. The Act also mentions about the penalty ranging from one year and Rs 10000/- if any type of misuse of water is identified.

As per the amendment to the Kerala Water Supply and Sewerages Act, 1986 in 2008, if there is a theft of drinking water for the first day the government imposes a fine of Rs.2000/- and after that the amount will increase by Rs.100/-. There will be prosecution proceeding against the water theft. For this there will be imprisonment for 6 months. If the authorized plumber also play a part in the theft of water, then he has to undergo an imprisonment upto 3 months and fine of Rs 1000/-. If any person misuses the public tap the penalty will range from imprisonment of 1 month and a fine upto Rs.5000. If an industry misuses the drinking water available to them, the penalty will range from one year and fine of Rs.5000/-.

The flats usually construct under ground reservoirs for storing water. Usually flats take a single connection and large amount of water is collected and stored. As a result, there is water scarcity in the nearby areas. As of now, there is no law to punish the illegal use of water by flats. As per the new Act, there will be imprisonment there will be imprisonment upto 6 months and a fine of Rs 5000/-. 

Now the Water Resource Department of the Kerala Government is planning to conduct a water Audit to look into the matter like water theft and water leakage. It is estimated that about 50% of the water is lost in the form of water theft and water leakage.
The Department does not have any measure to find out this problem. As a result of this, KWA has to suffer large economic loss.

For detecting the water theft state is divided into four zones and ‘non-revenue water assessment wing’ is created to detect how much amount of water has flown through that zone. For this main pipe line, sub lines, number of institutions and houses to which the pipe is connected us taken into consideration. If there is difference between the water used by the consumer and the water flowing through the pipe, then it can be estimated that there is water loss from the pipe. For this specially designed instruments are installed on the earth’s surface through which the amount flowing through the pipe can be detected and water leakage can be identified.7

Consumption of Drinking water in the state in Percentage8
Meeting water demand is going to be a Herculean task and would need an integrated strategy combining traditional source, systems and wisdoms with modern piped water systems.

**Water Pricing and Related Problems**

Drinking water is a free gift of nature. Residential water supply is a public utility and its output is an essential consumer good. However, it is not a pure public good either as a provision of this good based on pricing is possible to some extent. The pricing
policy should be such that the norm of distributive justice or the welfare objective is adhered to. Water supply is an economic activity that is highly capital intensive. It is not a ‘once for all’ type of investment as new projects or augmentation or modernization scheme of existing projects have to be taken up along with the growth of water demand. Distribution of water at a price would be desirable from the economic angle, not only from the point of view of the supplier but also from that of the consumer.

In developed economics recovery of cost is the major purpose of water pricing, questions of equity receive only secondary importance. The criterion for pricing is that ‘price should recover completely the capital investment and the recurring expenses’. In spite of recommendation of several committees on the need for building up financial autonomy in operation of water supply schemes, India in general, Kerala in particular, does not follow any consistent policy on water pricing.

At the time of formation of KWA, water tariff was low and it varied from place to place. There was a system of free allowances and local bodies used to collect water charges. Also, the billing system was highly irregular. To improve the situation, ‘Provisional Invoice Card’ (PIC) was introduced in some places in 1988. A system for collection of water charges through banks was introduced later and KWA supplemented the PIC system with an adjustment bill system based on actual measurements of water use for every 6 months. With a view to unifying water tariff, the Kerala Government issued order in 1991, fixing a uniform tariff for the entire state. The minimum charge was fixed at Rs.10/KL upto 1000 lpm and the system of free allowances was withdrawn completely. The financial consultant(M/S Ferguson & Co.) recommended that if water
rates were increased by 15% every year from 1991 the KWA would become self sufficient by 2001.9

In Kerala, the number of water supply schemes in which water charge are levied and collected by the KWA is small. In case of most of the schemes, the responsibility rest with the local bodies. Panchayats fix rates in case of rural water supply schemes operated by them whereas in case of urban water supply, this is done by the municipality or the corporation concerned. Water supplied through public taps and street fountains are not metered and no charge is levied. But water supply in house holds and other consumers are metered and charged. Water chargers levied in the state of KWA appeared to much lower than charges collected in neighbouring states.

S.38 of the Kerala Water Supply and Sewerages Act, 1986 gives the power to the Authority to supply water. The Authority shall on an application made in that behalf by the owner or occupier of any premises grant supply of water for domestic purposes for: (a) any premises situated within a distance of 30m from an existing area; (b) any premises situated beyond a distance of 30m from an existing main, if the applicant under takes to bear the cost of extension beyond the distance of 30m. The Authority shall bear the cost of extension only in respect of so much distance, not exceeding 30m as is sufficient to connect the nearest existing main with the outer limit of the premises.

The Authority may on application made in that behalf grant supply of water for any purpose other than domestic purposes.

In Pankajakshan v. State of Kerala10 the Kerala High Court held that permitting a private connection from the pipes laid by and belonging to the Authority, is ordinarily the function of the officials at the lower level. A Minister of the State, who is
the Chairman of the Authority, has no power or competence to sanction a water connection or grant supply of drinking water.

A person who make use of the water supplied by the Kerala Water Authority is a ‘consumer’.\textsuperscript{11} In \textit{P.M.Jacob v. Kerala Water Authority, Kottayam}\textsuperscript{12}, on 1/12/1995 the petitioner availed casual water connection from the KWA. According to the said connection, petitioner remitted casual charge till 26/12/1997. On 26/12/1997 he submitted an application to the KWA for converting the casual connection to a domestic connection. The petitioner remitted monthly charges for the casual connection till the month of July, 2000. After giving the first application and within the period up to July 2000 the petitioner made several oral demands to the KWA for changing the above casual connection to a domestic connection. Since the KWA has not transferred casual connection to a domestic connection the petitioner again submitted an application on 19/2/2003 to change the casual connection to a domestic connection. In spite of the above irresponsibility, the KWA has also demanded the petitioner to remit water charges up to 1/06 amounting to Rs.13,543/- and threatened the petitioner that the water connection will be disconnected without further notice. The arbitrary act of KWA is quiet illegal and unjustifiable. The Consumer Redressal Forum in its decision held that there is deficiency of service from the part of KWA; therefore the authority should set aside the grievance of the petitioner by changing the casual connection to the domestic connection as soon as possible.

\textsuperscript{11} In \textit{Jayasree Balakrishnan v. Managing Director, Kerala Water Authority}\textsuperscript{13} the complainant is residing in a residential building and is using the water connection for domestic purposes only. She was remitting the water charges promptly without any delay.
On 29/6/2000 the water meter become fault and the complainant reported the matter to the opposite party. On 19/7/2000 the new meter was purchased by the complainant and the complainant requested the opposite party to change the meter at the earliest. But the opposite party never took any steps to change the faulty meter. While on 21/10/2000 complainant received notice to get the meter changed and another notice where she was directed to pay an amount of Rs 25,044/- towards arrears up to December 2001. On enquiry, complainant could understand that she was treated as non domestic consumer form January 1999 onwards and water rates levied as per non domestic tariff from January 1999 to December 2001 alleging that the water was used for out house construction and to the consumption of another house on the opposite side. From 25/3/2002 to 27/1/2005 the water meter showed a consumption of only 2160KL averaging 62KL per month which would cost only Rs 8506/-. The complainant being a consumer had approached the Redressal forum. The forum ordered not to disconnect the water connection and reduce the amount to be paid by the consumer as soon as possible.

Through these decisions, the Courts and Consumer Forum gave full power and authority to the Kerala Water Authority to deal with water supply availability and the aggrieved person can approach the court as a ‘consumer’ against the Kerala Water Authority for its inefficiency in granting water.

S.39 deals with the provision that the water supply for domestic purposes not to be used for non domestic purposes. S.42 provides that the Authority shall provide a water meter and attach the same to the service pipe in premises connected with the water works of the Authority. The expenses of installation and the rent for the use of water meter shall be paid by the consumer.
S. 43 deal with the role of licenced plumbers. No person other than licenced plumber of the Authority or a person duly authorized by it shall execute any work in respect of a water connection not being a work of trivial nature and no person shall permit any such work to be executed by a person other than a licenced plumber or by a person duly authorized by the Authority.

S.45 gives the power to the Authority to cut off the water supply if any of the following condition exists:-

1. if any tax, fee, rental, cost of water or any charge or other sum due under this Act is not paid within a period of 30 days after service of a bill for the same.

2. If the consumer damages or caused to be damaged the water meter or any connection pipe;

3. if the consumer refuses to admit any officer or servant of the Authority duly authorized in this behalf into the premises which he proposes to enter for the purpose of executing any work;

4. if the service pipe or any tap or other fitting or work connected there with is found on examination by an officer or servant of the Authority duly authorized in that behalf to be out of repair;

5. If by reason of leakage in the service pipe or any tap or other fitting or work, damage is caused to a public street and immediate prevention thereof is necessary.

S.60 deals with the General penalty. Whoever in any case in which a penalty is not expressly provided by the Act or any rule or regulations made there under, contravenes the provisions of this Act or of any rule or regulations made there under or fails to comply with any notice, order or requisition issued under the Act shall be
punishable with fine which may extend to Rs.1000/- and in the case of continuing failure or contravention, with an additional fine which may extend to Rs.25/- for every day on which the contravention continues.

At present, KWA is directly billing consumers and collecting water charges except in Thrissur, where the city corporation does the job. One of the major weaknesses of KWA is its inability to locate such connections and take appropriate legal action. Charge collection from local bodies for street taps and stand posts is not sufficient either.

The prevailing pricing policy fails to meet the objectives of the economy, efficiency and welfare. In Kerala, water charges are uniform for all users irrespective of income status. Such a pricing policy is discriminatory against lower income groups. Two monthly meters reading and billing has been attempted at several places and a major drawback is that KWA does not have sufficient staff for meter reading, billing and collection.

There are different methods adopted for pricing water. In the ‘Flat Rate or Fixed Monthly Rate’ method a fixed charge per month is levied on the consumer regardless of the quantum of water consumed. In the Kerala context, this method would promote in efficient and uneconomical usage of water and the method is highly discriminatory against poor consumers. The ‘constant rate’ method which charges a constant price from all consumers is in operation in Kerala. A minimum charge is fixed for consumption below a specified quantity of water. The third method is ‘block rate fixing’. Two types of block rates are fixed: - ‘declining block rates and increasing block rates’. The declining block rate system employs a minimum charge for an initial quantity followed by smaller unit prices in the higher discrete ranges for consumption. This
pricing system is unsuitable for Kerala from the point of view of equity, as low income groups who generally consume lower quantities of water will be charged higher average prices while high income groups would pay low average prices. In the ‘increasing block rate system’ the unit price for water increases as a consumer uses more water. At a time when an increasing water demand exists, this policy will be advantageous from the point of view of both water conservation and equity in distribution. This system is highly suited for the Kerala context, where the per capita income level i.e., lower than that in many states of India and where wide disparities in income distribution exist.

*Income of KWA from water charges during 2009-2010*[^14]

A consolidated statement showing the demand, collection and balance of water charges from the domestic, non-domestic and industrial consumers for the year 2009-2010 is shown below.

<table>
<thead>
<tr>
<th>Category</th>
<th>Demand</th>
<th>Collection</th>
<th>balance outstanding As on 31/03/2010</th>
<th>percentage of collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>11225.54</td>
<td>10041.23</td>
<td>6313.02</td>
<td>89.44</td>
</tr>
<tr>
<td>Non-domestic</td>
<td>11361.88</td>
<td>10226.88</td>
<td>16226.71</td>
<td>90.01</td>
</tr>
<tr>
<td>Industrial</td>
<td>1338.26</td>
<td>944.83</td>
<td>3228.38</td>
<td>70.60</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>23925.68</strong></td>
<td><strong>21212.94</strong></td>
<td><strong>25769.01</strong></td>
<td><strong>88.66</strong></td>
</tr>
</tbody>
</table>

To increase the demand/collection and reduce the distribution losses KWA has taken the following steps:
1. District level Adalats are conducted to accelerate collection.

2. To ensure 100% billing, the number of readings to betaken by a meter reader in urban/rural areas has been specified.

3. In order to pressurize the defaulted consumers in clearing the arrears steps have been taken to disconnect the water connection and initiate revenue recovery proceedings.

4. When water theft is detected, water connection is disconnected and legal proceedings initiated against the consumer involved.

**Evaluation of the present system and future strategies**

In general, the challenges that Kerala faces today in the water supply sector are two fold – reaching to the uncovered sections of the population and improving the quality and quantity of existing scheme.

Water supply in cities, towns and rural areas of the state remains the primary responsibility of KWA or of local bodies. The financial status of KWA has become increasingly fragile over the past two decades. The organization is finding it entirely difficult to maintain even the existing level of water supply services or to meet the expenditure from the revenue earned from water supply charges and the non plan grants of the Government. In the case of rural water supply schemes managed by the local bodies, the task of source development, maintenance of distribution system and collection of water charges remain with them. Whenever transfer of created assets from the centralized system to the local bodies for operation and maintenance has
taken place, the schemes performed badly for want of adequate assured plan assistance.

Even in the case of most of the Urban Water Supply Schemes (UWSS), the operating organizations do not have a proper vision in the formulation of strategies for operating and maintaining the existing schemes and their water supply. Lack of reliable and accurate data makes it difficult to study the schemes and make suggestions for the improvement.

A large section of the population of Kerala is ‘water illiterate’ resulting in the consumption thereon, that causes considerable wastage of treated water. In general, it may be said that the pricing mechanisms has not been used to guide the decision of consumers as to how much to consume or how to balance supply with demand. The present water connection charges and water tariffs are heavily subsidized. The upward revision of water charges and water tariff during the past half century has been minimal, not adequate even to compensate for the inflation rate.

Being the guarantor of loans received by KWA from various financial institutions and agencies for implementation of water supply schemes, the State Government comes to the rescue when questions of repayment of loans arise.

Organizations and local bodies which operate water supply schemes do not take timely and appropriate action for maintenance. The local bodies operating these schemes, the Central Public Health Environment Engineering Organization (CPHEEO) of the Government of India formulated a ‘Manual on Water Supply and Treatment’ which lays down guidelines as to how the system should be maintained. However, in most cases these guidelines are seldom followed. Low water pressure at
the supply point, poor water quality and frequent pump failures are common in Kerala’s Water Supply Schemes. Improper maintenance or lack of maintenance of these schemes has led to a progressive decline in the quality of services rendered, resulting in resistance from consumers of any proposal to effect an increase in water tariff and connection charges.

A considerable proportion of treated water is lost through leakage in the distribution system. Measures for reduction in loss due to leakages and theft are weak, inadequate and ineffective. Also, the awareness about the use of conservation methods and equipment to ensure efficient use of water is generally lacking. It has been found that the major portion of leakages (about 82%) occurs in the house service connection through service pipes and taps and the remaining 18% occurs due to leakage in pipelines15.

It is well known that illegal connection drawn from public water supply lines and that a huge quantity of treated water is taken without payment causing heavy revenue losses to the agency supplying water.

The responsibility of local bodies include identification of water resources, generation of potable water from the sources, distribution of water, fixation of tariff and charges, collection of revenue and operation and maintenance of schemes.

Grama panchayat have successfully shifted their role from being providers to facilitators. It was found that self regulation is the lay concept on which beneficiary societies functioned. Sealing of additional taps to manage acute drought conditions in summer and established special cells for repairing faculty water meters are seen to have been followed. Though people were aware about the sources of pollution,
sanitary surveys were never carried out; nor were water quality tests conducted. Lack of database management pertaining to these schemes at the panchayat level was a serious constraint on planning. A quick response system of customer needs along with an efficient metering, billing, and collection systems would substantially enhance the ‘willingness to pay’ on the part of the public.

Table 5.5

The progress during 2011-2012 in the drinking water supply in the State of Kerala

<table>
<thead>
<tr>
<th>Total number of Habitations (^{15b}) as per IMIS data</th>
<th>Target (As marked into IMIS for 2011-’12)</th>
<th>Habitation (reported covered by 31 Jan 2012)</th>
<th>Total anticipated achievement During 2011-’12</th>
</tr>
</thead>
<tbody>
<tr>
<td>11883</td>
<td>667</td>
<td>329</td>
<td>400</td>
</tr>
</tbody>
</table>

**Conclusion**

The acquisition, treatment and free distribution by the State are the prevailing institutional arrangement for public water supply in the rural areas of Kerala. These water projects are financed by the budgetary allocation of the state and central governments and through the loans taken by the Government (which will be repaid by the state through the budgetary allocation) and grants provided by international development agencies. It is the broad concern that the whole population should get safe drinking water that has shaped the policy objective of the State Government in this regard. Safe water is not defined as water with some specific qualities and attempts have not been made to see whether this specified water can be acquired
through any other cheaper mode. Rather than doing this, pipe water is taken the same as safe water. This assumption is found to be shaped by the following two factors. Firstly, since pipe water is considered as the only form of safe water in cities, this is taken as the ideal form by the socio-political system. Secondly, the organization (Kerala Water Authority) which came to exist for urban water supply and which gained expertise in technology suitable for this purpose has become responsible for rural supply too, and has influenced the decision making for rural water supply. Thus connecting to the central pipe water systems became the ultimate aim of the organization and this became the policy objective of the Government which takes pride in extending the urban mode to rural areas. The essential problem with the approach of the governmental organization is that it did not examine whether there is any other cost effective sources of safe water, taking certain quality standards as the criteria. It is expected from the state to have a genuine concern on the drinking water availability.

The rationale for governmental intervention in drinking water should be to ensure safe water for the whole population. However this has to be achieved through two processes. The provision of safe water must be made through the most economic status which does not reduce their access to safe water. Taking these as the concern of the Government, one should try to understand the ‘best ways’ of providing water in a region and the role to be played by the Government. It is obvious that the Government’s role not always be the centralized production and distribution of water. The importance of multiple sources and the possibility of using simple purification
systems which can easily be done in small units without increasing cost should be made more effective.

The institutional mechanism for governmental intervention in drinking water supply should be based on the specific requirements of the localities. In some cases, providing financial assistance to dig open wells may be the best strategy. In certain cases, small systems catering to the requirements of a few families will be appropriate. The gram panchayats are the suitable organization to promote such schemes and intervention of the State Government may not be required. However, the funds for the subsidized provision of drinking water should reach panchayats directly and not as a tied sectoral allocation for drinking water through the Central technical organization.

The role played by the authorities in providing safe drinking water is very important in a State like Kerala. There should be cooperation between the local bodies, the Government, and the people in providing safe drinking water. The implementation of new water supply projects should be in manner which should be cost effective and provide maximum benefits to the beneficiaries.
References:


1b. ‘Institutional arrangements in rural Water Supply in Kerala’, [http://www.isec.ac.in/institutional%20Arrangements.PDF](http://www.isec.ac.in/institutional%20Arrangements.PDF) accessed on 19/3/2012 at 11a.m


1d. ‘Role of Kerala Water Authority in implementing schemes’, [http://www.kwa.ker.gov.in](http://www.kwa.ker.gov.in) accessed on 21/3/2012 at 5 p.m.


1f. Supra n.1d

1g. Ibid

2. Kerala State Economic Review (Various Years), State Planning Commission, Government of Kerala, Thiruvananthapuram


4. [http://www.wsp.org/userfiles/file/Kerala_field_note-PDF](http://www.wsp.org/userfiles/file/Kerala_field_note-PDF) accessed on 16/2/2012 at 3.00 p.m


6. Ibid Section 46D.

7. Supra n. 1 Section 46B to Section 46D.


10. AIR 1986 KLT 901.

11. As per Section 2 (VI) of the Kerala Water Supply and Sewerages Act, 1986 a ‘consumer’ means any person getting the benefit of water supply or waste water services from the Kerala Water Authority.

12. A case filed under Section 13 (1a) of the Consumer Protection Act, 1986 and the decision was pronounced on 22.5.2007. As per Section 13 (1) of the Consumer Protection Act, 1986, the District Forum shall, on endeavor, if it relates to any goods – (a) refer a copy of the admitted complaint, within 21 days from the date of its admission to the opposite party mentioned in the complaint directing him to give his version of a case within a period of 30 days or such extended period not exceeding fifteen days as may be granted by the District Forum.

13. Case filed under Section 13 of the Consumer Protection Act, 1986 and the decision was pronounced on 18/2/2005. Section 13 of the Consumer protection Act, 1986 deals with the Procedure on Admission of Complaint into the Forum.


15. Ibid.

15a. ‘Minutes of the meeting to discuss the NRDWP and Jalmani Annual Action Plan 2012-’13 of Kerala State’, www.ddws.gov.in/sites/uploadfiles/...Kerala_AAP_minutes.PDF accessed on 23/3/2012 at 2 p.m.

15b. Ibid. Each habitation should include 1000 people.