OPERATION AND MAINTENANCE OF RURAL WATER SUPPLY SCHEMES OF KERALA WATER AUTHORITY: A STUDY ON THE NON-TECHNICAL AND MANAGERIAL ASPECTS OF EDAPPAL,MALA AND CHOONDAL SCHEMES

A study commissioned by the
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Preface

This report is the outcome of a consultancy assignment commissioned by the Operation and Maintenance Improvement Programme (OMIP), supported by the Danish and Dutch Governments. The study focussed on the financial and managerial aspects of the three rural Water Supply Schemes of Edappal, Mala and Choondal. An attempt has been made to analyse the existing situation and suggest measures for improving efficiency and sustainability of these schemes through people's participation.

We are thankful to the OMIP for giving us this opportunity. Many individuals have extended their support and assistance in the execution of this study. We are thankful to them all. Mr. Mogens Mechta, the Team Leader and Mr. KM Namboodiry, Senior Consultant, OMIP have been patient enough to give us the right direction and support on various stages. We are indeed grateful to them. Mr. RVA Thampuran, Hon. Consultant and Mr. RR Varma, Programme Manager, OMIP made themselves available for several rounds of discussions. We thank them both. Mr J. Gussenhoven the Dutch Consultant has gone through an earlier draft and made several useful suggestions. We are extremely thankful to him.

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The KWA Officials at Sub-Divisional, Divisional, and Head Office level were extremely co-operative and helpful to us. We thank them all.

Dr.Balachandra Kurup, the Executive Co-ordinator, SEU has shown keen interest in the study and extended all possible support to us. We are thankful to him for that.

Lastly, we acknowledge our sincere thanks to the Standpost Attendents, Members of Ward Water Committees, Panchayat Presidents and Members, for sparing their time with us to provide the necessary information during our field work.

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Trivandrum.

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PART II

CHAPTER V INDIVIDUAL RURAL WATER SUPPLY SCHEMES

EXECUTIVE SUMMARY

1. BACKGROUND

1.1 This summary presents the findings, conclusions, suggestions and recommendations of the consultancy work on the non-technical aspects of Operation and Maintenance Improvement Programme (OMIP) entrusted to the Institute of Management in Government, Trivandrum. This assignment was completed during July-October, 1995.

1.2. Objectives

The main objective of the consultancy was to develop propositions for partnership in management of rural water supply in the OMIP selected schemes viz. Mala, Edappal and Choondal. More specifically, the study aims to assess the existing O & M management systems of these rural water supply schemes, the SEU structures and their functioning and the possibilities of partnership management between KWA, local bodies and other people's committees. The study also analyses the financial feasibility and the sustainability of schemes.

1.3. Organisation of the report

This report contains two parts. Part I under 4 sections explains the background of the study, the financial aspects of KWA, tariff structure, billing and collection practices of KWA, and the O & M arrangements regarding RWS. Part II in 8 sections examines the three individual RWS schemes viz. Mala, Edappal and Choondal, a critical analysis of SEU and the structures created for RWS schemes, Panchayat and RWS schemes, assessment of willingness and ability of consumers to pay for water, fault detection, reporting and follow up, functionality study, Panchayat Raj System and management of RWS and suggestions and recommendations.

1.4. Methodology

The study covered the Rural Water Supply Schemes in Edappal, Mala and Choondal. 6 Panchayats in Mala and 5 Panchayats in Edappal were covered. Both primary and secondary data were collected. A sample of 11 Panchayat Presidents/Members, 33 members of Ward Water Committees, and 33 stand post Attendants were interviewed to elicit information on various aspects relating to the study. Besides, data were collected from the two SEU Units at Trichur and Kozhikode.

2. FINANCIAL STATUS OF KWA

2.1.1. The Kerala Water Authority (KWA) is an autonomous body constituted by the Government of Kerala in 1984. It is the sole agency responsible for water supply in the state.

2.1.2. The KWA earns its income primarily from the sale of water. The different sources of income of KWA are: Water charges levied from domestic, non-domestic and industrial users; water charges collected from local bodies for water supplied through public taps; maintenance charge collected from local bodies; other income from investments, advances etc. and grants from the Government of Kerala.

2.1.3. The expenditure incurred by KWA are a) capital cost b) operation and maintenance cost and c) other expenditures. Capital Cost involves items of expenditure incurred on account of constructing water supply schemes. The O & M costs involves expenditure on operating the schemes. Establishment expenses, interest on loans and depreciation are other expenditure incurred by KWA.

2.1.4 A comparison of income and cost during the period 1990-94, indicates that the

expenditure of KWA always exceeded its income. In fact, this kind of deficit has been a permanent feature of KWA since its inception. Taking this aspect into consideration, the KWA has introduced a tariff system which would nullify the deficits by 2001 A.D.

2.2. Cost per unit of water

2.2.1. According to the study conducted by Ferguson and Co. in 1992, the KWA is producing a daily volume of water between 500-600 mld. Based on the calculations, the income per unit volume of water (excluding grants) are: Rs.1.73/KL for water produced, and Rs.2.31/KL for water distributed, after allowing 25% loss in distribution.

2.2.2. The O & M cost per unit of water has been calculated by Ferguson & Co. as Rs.2.56 per KL for the water produced and Rs.3.41 per KL for the water distributed after allowing 25% loss in distribution.

3. TARIFF STRUCTURE, BILLING AND COLLECTION PRACTICES

3.1. The KWA now follows a procedure where all domestic and other categories of consumers are billed on a monthly basis according to the actual quantity of water consumed. The revenue accounting staff at the section level are responsible for billing and collection of water charges. In 1991 KWA introduced the Provisional Invoice Card System (PIC) in few selected centres and is now extended all over the State.

3.2.1. The KWA has introduced a revision in the tariff structure with effect from January 1, 94. With a view to narrow down the operating deficit, the KWA also proposed a 15% raise in the tariff every year.

3.2.2. Tariff for public taps are not on the basis of actual water consumption. Instead, a flat rate of Rs. 875 per stand post is fixed.

3.3. Problems related to tariff and billing

3.3.1. *Non realisation of water charges:* In all the three schemes the revenue collected fall short of the actual amount due to KWA, till 1994-95.

3.3.2. *Ineffective billing practices:* There is no effective billing practice followed in any of the schemes. For example, in Mala and Choondal water charges are collected from private domestic consumers at the minimum rate of Rs.17/- per month. The actual consumption is not verified and hence no additional bills are served. Inadequacy of meter readers is pointed out as the reason for this. None of the Panchayats were served with demand notice on a regular basis, in any schemes.

3.3.3. *Inadequate administrative arrangement at sub-divisional level:* There is no clear cut division of responsibilities regarding revenue collection at divisional level. The Junior Superintendent and the supporting staff entrusted with this task have also to attend to other functions.

3.3.4 *Inadequate emphasis on cost recovery:* Cost recovery or collection of water charges seems to be not a priority concern for the KWA officials.

3.4 Suggestions

3.4.1 Create/allocate a revenue collection cell at sub-divisional level with one junior superintendent and one clerical staff to exclusively attend to revenue collection.

3.4.2 In the absence of meter readers, the sub-divisions may be authorised to get this work

done by other categories of employees by giving some incentive or to appoint contractors to do this.

3.4.3 Panchayats may be encouraged to collect water charges from stand post users. Administrative arrangements may be made to collect this amount on a regular basis from the Panchayats.

3.4.4 In order to streamline the collection process, Provisional Invoices Card system and the computerisation of billing and collection of water charges may be introduced in all the schemes.

4 KWA AND THE OPERATION AND MAINTENANCE ARRANGEMENTS

The Assistant Engineer (AE) is in charge of the O & M of schemes. He is responsible for the day-to-day aspects of operation and maintenance of schemes. He is assisted by administrative and technical staff in the categories of supervisors, overseers, electricians, clerks, watchmen etc. KWA now follows a system of getting the repairs done through contractors but the AE supervises these repairs as he is ultimately responsible for such tasks.

4.1. Problems related with the O & M arrangements

The problems faced by KWA with regard to O & M of the water supply schemes are as follows:

The low priority assigned to O & M responsibilities by KWA.

Lack of adequate number of staff to perform the operation and maintenance tasks

Lack of flexibility to take decisions at sub-divisional level

Inadequate fund for maintenance and repairs

Lack of orientation and training for operational level staff

4.2. Suggestions

Our suggestions on this aspects are:

Since 1990, KWA has been gradually changing its attitude towards operation and maintenance. However, the pace needs to be accelerated and the officials may be imparted training to manage the scheme in a viable and sustainable manner. They need to be trained to run the schemes in a cost-effective, and financially viable manner with the involvement of people who are the consumers.

Adequate support may be provided to the operating staff in terms of modifying the existing procedures to make decision-making possible at lower level. KWA also should develop manuals of system and procedures in this context.

Steps may be taken to identify the requirement of staff for performing operational tasks and these vacancies may be filled at the earliest. Alternatively, more of the operational and maintenance function may be entrusted with contractors under the supervision of AEs.

KWA may encourage the involvement of people and their representatives in local bodies in the operation and maintenance of schemes. This can reduce the

burden of KWA in several aspects and will help run the scheme more efficiently than before.

5. INDIVIDUAL RURAL WATER SUPPLY SCHEMES OF EDAPPAL, MALA AND CHOONDAL

5.1 Edappal

5.1.1 This scheme was taken up in 1985 with the assistance of the Danish International Development Agency. The work started in 1987 and the project was commissioned on 23.8.94.

The scheme envisages water supply in Edappal and the 4 adjoining Panchayats of Vattamkulam, Thavanoor, Alamkode and Nannamukku, with a coverage of 125 sq.kms. The source of water is Bharathapuzha river from where it is collected through infiltration gallery of 250 M long to a well of 8 M diameter. The water is then pumped to an elevated tank of 10 lakh litres capacity at Thrikkannapuram. The initial estimate of the scheme was Rs.330 lakhs. However, when it was completed, the cost incurred was Rs.897 lakhs.

5.1.2. It was envisaged in the beginning that the scheme will provide private domestic connection by May 1995. This has not happened on account of technical and administrative problems. The income therefore will be solely from the 739 public stand posts at a fixed rate of Rs.875 per year to be paid by the Panchayats. The total accruable income for 1994-95 will thus comes to Rs.6,46,625/-.

5.1.3 *The O & M cost per unit volume of water*

The current production of water in the scheme for the year 1994-95 is about 1329

mlpa. The cost incurred to produce this water is Rs.38,36,420, excluding depreciation and interest. The cost per unit of water thus works out to be Rs.2.9 per 1000 litres. Deducting the loss of water in transmission and distribution, the water distributed during 1994-95 will be 997 mlpa. The per unit cost of water distributed in that case is Rs. 3.8.

5.1.4. *Financial Viability*

The Edappal Scheme during 1994-95 incurred a loss of about Rs.31,89,795/-. When the scheme is fully operational, as envisaged in the plan document, it plans to produce about 10.8 mld to serve a population of about 1.96 lakh by the year 2011. The annual production of water at that time will be 3,942 mlpa which is expected to bring down the defict considerable. The different options under which the deficit can be reduced if production is distributed uniformly are:

a) by keeping the number of public taps at the present level and distributing the entire additional production through private domestic connection.
b) distribute the entire additional production of water at the rate of 40% for private domestic connection and 60% for public tap.

The first option will generate an additional amount of Rs.1,95,500/- per year from private connections. The deficit in that case can be wiped out in about 16 years time. The second option can generate an average income of about Rs.94825/- per year which will take several more years to cover the deficit.

5.1.5. *O & M arrangement*

The scheme has a staff pattern with an Executive Engineer at the top assisted by an Assistant Executive Engineer and two Assistant Engineers There are two Overseers of first

grade, six Work Superintendents and 28 other supporting staff. However, the actual staff position satisfies only 50 percent of this requirement with more vacancies in crucial areas of operation.

Individual responsibilities or job charts, reporting system, monitoring and control procedures etc. are not spelt out clearly.

5.2. RWS Scheme - Mala

5.2.1 The scheme was taken up in the year 1985 with the support from Royal Netherlands Government. It was designed to provide water to six Panchayats from the two taluks of Mukundapuram and Kodungallur of Trichur District. The source of water is the Chalakkudy river where the water is tapped at Vynthala by constructing an intake well. The ultimate water demand is worked out to 11.2 mld, if the per capita supply rate for water is taken as 55 lpcd. The initial estimate of the project was Rs.341.12 lakhs. The cumulative expenditure as on 31.12.94 is Rs.547.25 lakhs and the scheme has an additional budget provision of Rs.90.91 lakhs during 94-95. It is expected that the scheme will be fully commissioned by December, 1995.

5.2.2. *Water Supply*

The scheme envisages an estimated production of water of 11.21 mld by the year 2011. The population of the Panchayats covered in the scheme, as per the 1991 census, is 1,48,928. If the population increases @ 1.398% per annum, it will reach 1.90 lakhs by 2011 AD. The demand for water will then be 3425 mlpa

5.2.3. *Income from Water*

The scheme generates income from public taps, household connection and non-domestic connection and industrial connection. The total amount of the income due from all categories of users, during 1994-95 is Rs.17,13,320. In the absence of meter readers the scheme is facing problems in collecting water charges on the basis of actual consumption.

5.2.4. *O & M Cost per unit volume of water*

An amount of Rs.29,68,268 was spent on O & M cost during 1994-95 which includes salary, maintenance expenses and operating expenses.

The current production of water is about 1825 mlpa and the cost of water per unit volume is thus Rs.1.63 per 1000 litres.

5.2.5. *Financial Viability*

Mala Scheme has an operating deficit of Rs.25,95,145 during 1994-95 which could have been reduced to almost half ie., Rs.12,54,948, had the revenue collection been efficient.

As per the project document, the scheme is designed to produce 11.2 mld of water to serve a population of 2 lakhs by the year 2011 with a production estimate of 4088 mlpa. The increase in the production of water can bring revenue to KWA to help them offset the deficit. The following two options can be considered:

a) Distribute the entire additional production through private connections, both domestic and non-domestic and keeping the number of public taps at the present level.

b) Distribute the additional production between private consumers and public tap users (40 percent and 60 percent).

If the first option is adopted, it can yield an additional income of Rs.1,70,000 annually. Assuming that the increase in O & M cost will be offsetted by the increase in tariff rate the deficit margin will remain more or less stable. The additional revenue generated annually from private connection will wipe out the deficit in about 7 years time. The second option will generate less income, but will narrow the deficit over the years. The additional income generated annually from public and private water connections will be about Rs.82,000/- which would take 18 years to cover the deficit.

5.2.6. *O & M Arrangement*

The Sub-divisional Office is currently headed by the Assistant Executive Engineer with two Assistant Engineers, 2 clerical staff, 1 typist, 5 draughtsmen, 3 Work Superintendents, 9 operators and 9 other supporting staff at lower levels. Several crucial positions are lying vacant. There are inadequacies at the operational level where nearly 1/4 of the positions are lying vacant. The scheme does not have any meter readers at present and the collection of water charges is done on a provisional manner collecting only the minimum charge from the consumers. This has resulted in financial loss to the KWA and inconveniences to consumers. There seems to be lack of clarity at all levels about the specific responsibility of employees.

5.3 Choondal

5.3.1 This scheme was one of the small rural water supply scheme of KWA in Trichur District with the financial assistance of Life Insurance Corporation. The scheme which depends on ground water was partially commissioned in 1987 and was expected to meet the requirement of mainly the people in Choondal Panchayat. The scheme became fully operational in 1991. Choondal scheme also distributes water through public taps and private taps, both for domestic and non-domestic purposes. The financial estimate of Choondal

Water Supply Scheme was about Rs.14.01 lakhs. However, the actual expenditure went up to Rs.30.71 lakhs, when the scheme was extended to the adjancent Panchayat.

5.3.2 The scheme was designed to produce about 4.5 million litres of water per day. However, the present level of production is for 15 hrs. on an average, and generate about 5.4 lakh litres a day. The estimate of income to be collected as water charges during 1994-95 was Rs.2,09,697. Here again the KWA was not able to collect water charges due from the Panchayats, which amounts to Rs.1,20,750. In terms of O & M cost and the accruable income the Choondal generates a surplus of Rs.27286/- for the year 1994-95. However, in terms of the actual income realised, there is a deficit of Rs.93,464/-.

5.3.3. *O & M cost per unit*

The O & M cost during 1994-95 was Rs.1,82,411. The unit cost of water is estimated about Rs.0.92 per thousand litres.

5.3.4. *Financial Viability*

Choondal scheme presents an optimistic picture in terms of surplus it generates, which may be due to the following:

a) Since the scheme is based on underground water which requires practically no treatment, the components of O & M expenditure are limited to energy charges, repairs and maintenance etc. This reduce the cost considerably.

b) The scheme is only a small scheme managed by the Guruvayoor sub-division. The cost therefore excludes the pay and allowances of staff.

Regarding the income, the earnings would have been more if the KWA had monitored and took meter readings of water used by consumers and charged them accordingly. Similarly Panchayats were never approached seriously to collect water charges.

5.3.5. *O & M arrangements*

The scheme being small there is no separate arrangements at the sub-divisional level. The scheme is at present operated by two technical staff as operators who are taken on temporary basis.

6. SEU AND THE STRUCTURES CREATED

6.1. The basic approach of SEU which was established in 1988 is to facilitate community participation in the water supply and sanitation programmes through creation of certain structures consisting of people's representatives and local bodies. There are three units of SEU functioning at Kozhikode, Trichur and Quilon with a Coordinating Office at Thiruvananthapuram.

6.2. SEU Structures

In order to achieve its objectives, the SEU has created a three tier structure viz., Stand Post Attendants (SPAs), Ward Water Committees (WWCs) and the Panchayat Water Committees (PWCs).

6.2.1 *Stand Post Attendants (SPAs)*

A lady volunteer from the community, who is also a user residing near the stand post is selected by the WWC as SPA. This is to ensure community involvement at the grass roots level. The SPA has the following responsibilities:

1. To keep the surroundings of stand post clean and to see that the water is not wasted.
2. To ensure that the beneficiaries do not misuse the water from stand post.
3. To report any fault or misuse of water to the Ward Water Committee.

The SPAs are expected to work closely with other users of the stand post and the WWC. The latter is expected to help them in their smooth functioning.

6.2.2 *Ward Water Committee (WWC)*

The Committee consists of 7 members including two women. The selection of members is based on certain criteria laid down for the purpose. The committee has the major responsibilities of:

1. To mobilize voluntary labour in the construction and maintenance.
2. To ensure that the stand posts are kept clean and to conscientise people on this.
3. To take appropriate measures to prevent misuse of water, when such incidents are reported by SPA.
4. To take action in consultation with the KWA officials, when there is minor faults in the pipe or pipe line in the ward.
5. To report any serious faults to the concerned officials (KWA/Panchayat) and also to provide health education.

6.2.3 *Panchayat Water Committee(PWC)*

The Committee consists of panchayat ward members, a representative selected from WWC, an official representative nominated by KWA, an Assistant Engineer from the Kerala State Electricity Board, Health inspector, Panchayat Executive Officer, NSS, ICDS Supervisor/Officer and representative from SEU. The PWCs are responsible for the overall supervision of water supply scheme in Panchayats and to provide help and support to WWCs and the KWA.

6.2.4 *SEU structures - patterns of interaction*

The above structures are expected to function as an integrated system to ensure community participation and improve the functioning of the schemes. Their functions are also

defined accordingly. The SPAs at one end of this system contribute to the efficient use of water and maintenance and upkeep of public taps. They are directly linked with the Ward Water Committees and provides information on faults/misuse of water. WWC responds to these feedbacks and take appropriate steps to solve these problems. They function as nucleas at ward level and interact with Panchayat and KWA and play a coordinating role between the users of public taps/SPAs and other agencies. PWCs, at the next level, is expected to assist the WWCs in solving problems related to water supply. It is also assigned the overall responsibility in the management schemes. It works closely with KWA in matters related with drinking water.

6.3. SEU structures : Functioning and Problems

The various structures created by SEU were intended to work closely with other institutions. This is essential, for these structures by themselves are not in a position to undertake the management and O & M responsibilities.

6.3.1 *SPAs : functioning, problems and suggestions*

SPAs have been assigned three specific responsibilities - upkeep of the stand post, preventing misuse of water and fault reporting. In both the schemes, all SPAs are aware of these responsibilities. They were also performing these tasks. SPAs in general have been oriented about their role through education programmes imparted by SEU. Such programmes motivated SPAs adequately to take their tasks seriously. They are also aware of the cost involved in providing drinking water to them and hence the need for avoiding wastage and misuse of water.

The field study reveals that SPAs receive reasonable support from WWC on such matters. However, there are differences between Mala and Edappal. This is due to the fact that the water supply in most of the Panchayats in Edappal is irregular and in certain wards

it is reported that water is not available at all. This in turn affected the effectiveness of WWCs in Edappal considerably rendering them more or less defunct.

SEU through its field organisers maintains regular contact with SPAs. In both the schemes, SPAs reported to have received the following support from them:

a) facilitating piped water supply to them
b) locating stand post at appropriate places, and
c) facilitating the services of KWA in fault repairing.

While in Mala SPAs are satisfied with the support extended to them by the SEU, the position is not the same in Edappal. The reasons can again be traced to the fact that despite the efforts of SEU, water supply has been erratic and irregular here.

SPAs do not have any direct linkage with KWA. However, some of them, especially in Edappal, report faults/leakages directly to KWA. The responses received from SPAs in this connection indicate that KWA does not offer prompt or adequate service in such cases. In general, SPAs in Edappal are of the view that KWA does not provide much support. On the other hand, in Mala, KWA has a better image among SPAs because of the somewhat adequate water supply and reasonably prompt fault repairing.

The SPAs reported that during the initial period, the other users of the stand post were not cooperative enough and were facing problems in keeping the stand post and its surrounding clean and preventing misuse and wastage. The situation has now changed mainly due to the efforts of SEU and WWCs Now they are receiving support from the users in maintaining the stand post and its sorroundings clean, in reporting faults and in preventing

misuse of water. However, the SPAs face complaints from users such as irregular and inadequate water supply, delay in fault repairing etc.

The problems faced by SPAs may be classified into the following:

i) related to community
ii) related to KWA.

Problems such as lack of cooperation from other stand post users in the upkeep and cleanliness of standpost and its surroundings and misuse of water belong to the first category. The above problems need to be tackled at two levels.

(i) by providing appropriate orientation to public tap users on the need for cleanliness and hygiene with respect to the standpost and its surroundings, the value of water as it involves cost and the need for preventing misuse and wastage. This has to be done on a regular basis to sustain the impact.

(ii) by providing adequate support in terms of regular water supply and prompt fault repairing. In the absence of this, the orientation of stand post users suggested above may not be meaningful and effective.

Problems such as irregular water supply, delay in fault repairing and inadequate supply of water when it is most needed come under the second category.

The various dimensions of these problems that requires action are:

(i) Technical problems that constraints KWA in providing water adequately. This may be on account of design, maintenance or poor quality of spare parts, which need to be tackled at KWA level by taking appropriate corrective actions.

(ii) Managerial problems related to manpower, systems and procedures, attitudes and organisational environment. These problems require carefully planned

strategies such as manpower planning with focus on training, and the development of appropriate systems and procedures.

6.3.2. *Ward Water Committees: functioning, problems and suggestions*

Ward Water Committees (WWCs) are envisaged to play a major role in locating the standpost at appropriate places, taking steps to ensure water supply by reporting faults to KWA and assisting communities and KWA in matters relating to water supply.

WWCs, without exception, were involved in preparing ward maps and on the basis of certain criteria, they helped KWA to locate public taps at places that ensure utilisation for maximum number of households. They also perform a crucial role in the present system of fault reporting.

There is difference in the performance of WWCs between the two schemes. In Edappal, because of the problems relating to water supply, WWCs are not in a position to function as effectively as in Mala.

WWC and Panchayat maintain a close relationship on account of the fact that the convenor of the WWC is the ward member of the Panchayat. When faults are reported to the Panchayat by the WWC, the former communicate the same to KWA for corrective action. Besides, Panchayat discuss the water related problems when such issues are raised by the Chairman of water committee who is also a member of the Panchayat. However, there is lack of clarity regarding the role and type of linkage the Panchayat should have with the WWCs.

In the present set-up, WWCs in general do not have any direct linkage with KWA. However, there are instances when the WWC directly deal with KWA in fault reporting.

The reasons for the limited interaction between WWC and KWA are:

1. Lack of clarity on the part of WWC about the need for working closely with KWA. WWCs, by and large, perceive the linkage as something confined to fault reporting, and

2. reluctance on the part of KWA officials to acknowledge and accept the role of WWC in the functioning of the scheme.

In our sample, the only support that is reported to have received by WWCs is fault repairing.

The study probed about the problems faced by WWCs in fulfilling their tasks. The following were the major problems

1 Irregular water supply and the resultant lack of acceptability

2 Delay in fault repairing, and

3 Lack of cooperation on the part of public tap users (misuse of water)

The problems faced by WWCs are more prominent in Edappal compared to Mala. This is mainly due to the factors related to the water situation. Some of the reasons that are responsible for causing these problems are:

1. Irregular water supply: This has constrained the effective functioning of WWCs.

2. Inadequate man power at appropriate levels: Our discussions with KWA officials

revealed that in both schemes the number of staff responsible for O&M, like the operators, are inadequate which leads to problems in water supply.

3. **Inefficient fault repairing system**: The present arrangement of getting the faults repaired through contractors have several loopholes. Some of these drawbacks in the present system are:

(a) Lack of interest on the part of contractors to take up minor repairs as these are not profitable to them.

(b) Lack of control on the part of KWA over the contractors in getting the work done as required.

(c) KWA does not have any efficient system of checking/ inspecting/monitoring the work done by contractors.

(d) Lack of an effective system of ensuring the quality of materials used by contractors.

4. **Apathetic attitude of KWA officials**: Our interaction with KWA officials gives the feeling that they are not accountable to the public for providing prompt service. They are also not inclined to accept the existing arrangement of different committees in fault reporting.

6.3.3 *Panchayat Water Committees (PWCs) - functioning, problems, and suggestions*

Panchayat Water Committees are the apex level structures responsible for supervising the functioning of water supply schemes, helping KWA to solve problems related to water supply in the Panchayat, providing support and guidance to WWCs in their functioning and facilitating the collection of water charges due to KWA. However, the PWCs in both the schemes are not functioning effectively.

The reasons pointed out by the Panchayat presidents/members for the non functioning of PWCs are:

i) Panchayat presidents/members are really not convinced about the need of such a committee since the WWCs and Panchayats are capable of tackling the problems related to water supply independently.

ii) The committee includes officials from few departments such as KWA, KSEB, etc. It was pointed out that there is difficulty in ensuring participation of these officials in the meetings.

iii) Panchayat presidents are often busy with several issues and hence seldom get time to convene such meetings.

iv. The SEUs in both schemes, it seems, have not given adequate attention to PWCs in facilitating their supervisory role.

7. PANCHAYAT AND RURAL WATER SUPPLY SCHEMES

7.1. Panchayat and its involvement in water supply schemes

Panchayats in the present set-up are involved in the water supply schemes in the following way:

i. to support WWCs in the selection of location for public taps.
ii. to facilitate the maintenance of public tap/pipes through reporting the faults to KWA

The following problems are faced by the Panchayats:

1. Lack of adequate support from KWA
2. Inability to pay water charges
3. Inability to ensure regular water supply

7.2 Panchayat and KWA

Many of the problems mentioned above are linked with KWA and its functioning. KWA being the sole agency for water supply Panchayats are not in a position to involve themselves directly to improve the situation.

7.3. Drinking water situations in Panchayats

In Edappal all the Panchayats have reported that they have problems regarding the supply of drinking water through public taps. The problem is acute during summer and people have even agitated over this issue against Panchayat and KWA.

In Mala, the situation is somewhat better. Only 2 Panchayats have reported this as a serious problem. In all other areas water supply was rather regular but some of them expressed the view that the supply was not adequate or available when people needed it most. Here also water supply in summer is highly inadequate.

The Panchayats in both Mala and Edappal are concerned about the problems related with water supply. In Mala Scheme, the Panchayats were able to take up these issues with KWA more effectively than in Edappal. This was because of the patronage enjoyed by the present Panchayat leadership which was lacking in Edappal.

7.4. Linkages with KWA

In the present set-up, Panchayats do not have any formal linkage with KWA. The only channel envisaged is the PWCs which are defunct in both places. However, Panchayats were maintaining contact with the KWA through the fault reporting system. Besides, Panchayat

presidents or members were having informal interaction with KWA officials and getting the problems solved as and when these arise.

The presidents and members of the Panchayats in our sample are convinced of the need for strengthening the linkage between Panchayats and KWA. The following suggestions were offered by them in this context:

1. The PWCs need to be activated and the SEU should take up the responsibility of convening the meetings at regular intervals.

2. Panchayats may be permitted to take up simple repairs and maintenance in their respective areas.

3. A KWA official may be included in the WWCs so as to ensure the prompt service. However, this opinion is not shared by all members in the sample. Some of them were of the view that this may be difficult to implement.

8. WILLINGNESS AND ABILITY OF PUBLIC TAP USERS TO PAY FOR WATER

8.1 Present arrangement

At present, the water charges are borne by the panchayats at a standard rate of Rs.875/year per standpost. KWA is expected to collect this amount from panchayats as any other agency providing services of this nature.

However, many of the panchayats in the three water supply schemes of Mala, Edappal and Choondal have not paid their water charges regularly to KWA.

Panchayats have the following reasons for not paying the water bills:

1. Lack of fund: The income generated by most of the Panchayats are reported to be insufficient even to meet their essential requirements. The grant they receive from Government is also inadequate and is increasingly getting reduced, forcing Panchayats to depend more on its resources.

2. High water charges: Without exception, all the Panchayats feel that the standard rate per standpost is high and unaffordable.

3. Inadequate,irregular and poor quality of water supply,and

4. Poor repairs and maintenance

KWA too has genuine problems for not providing adequate or complaint-free services to the customers such as (1) lack of fund to undertake repairs. (2) lack of adequate staff to undertake the work. (3) the present system and procedures that causes delay, (4) low voltage of electricity etc.

8.2. Collection of water charges - responses from SPAs

The field study covered 33 SPAs (17 from Mala and 16 from Edappal). Regarding the capacity of consumers to pay for the water, all SPAs were of the view that the public tap users belong to low income group and hence may find it difficult to pay the water charges. When probed further it became clear that they may be able to meet the cost, provided the amount is nominal.

The willingness of consumers to pay, however, is subject to certain conditions. These 1) Regular water supply, 2) prompt repairs, 3) good quality water, 4) affordable water charge.

The opinions on the amount they can pay monthly also vary among SPAs. While 39 percent of them opined that users may be willing to pay a maximum of Rs.5 per month, the rest indicated that they can pay upto Rs.10 per month.

8.3 Response from WWC

A sample of 20 members of WWCs from Mala and 13 from Edappal were interviewed to elicit their opinion. Their views about the capacity of consumers to pay are more or less similar to that of the SPAs.

A sizeable percentage of the WWC members consider that public tap users can afford the payment of water charges if it is nominal. Here again, they have expressed certain requirements as preconditions for implementing water charges.

1. Affordability - The WWC members who supported the collection of water charges from consumers were unanimous that the amount demanded be affordable.

2. Satisfactory service - WWCs members were unanimous again that KWA should ensure regular water supply and prompt repairing, before the consumers are asked to pay.

8.4. Response from Panchayat Presidents/Members

70% of the Panchayat Presidents in our sample said that water charges cannot be collected from public tap users.

The arguments put forward by the category who is against collection of water charges are:

(a) low economic status of public tap users,
(b) Water being a basic need, panchayat should own the responsibility to provide it.

Those who are for collecting water charges argue mainly on the basis of the financial constraints of panchayats.

8.5. Cost sharing

In the case of the three schemes in our study, cost sharing is suggested for the following reasons:

1. It reduces the burden of panchayats which are struggling for resources.

2. It infuses a sense of involvement on the part of users which can avoid misuse of water.

3. Payment for water will enable the users to demand for better services from KWA. KWA will also be more responsive in this regard.

4. Payment for public taps from the users can also ward off unreasonable demands for public taps.

It is possible to collect on an average, an amount of Rs.5/- per month per family and this amount is by and large affordable and acceptable. Assuming that the number of users of a public tap is around 15, the panchayat will be able to collect, on an average, a sum of Rs.75/- per standpost per month. This will fetch Rs.900/- per standpost per year.

8.5.1. *Mechanism for collection*

In Kondotty of Malappuram district, the SEU (North) has initiated an experiment in

collecting water charges from consumers of public taps. Here, the SPAs are entrusted with the collection of water charges from consumers on a monthly basis. They maintain proper records and the amount collected is deposited in a bank. This experiment supports the feasibility of cost recovery from standpost users, provided the consumers are adequately conscientised, and appropriate mechanisms are worked out. It also requires certain modifications/introduction of procedures/rules.

Our suggestions in this regard are:

1. The present system of revenue collection may be modified to improve its efficiency. It would be appropriate if revenue collection responsibilities are separated from O & M responsibilities and even to have a separate cell that works within KWA.

2. Provision of adequate staff in the categories like meter-readers may be provided on priority basis. If that is not possible, individual schemes may be allowed to evolve strategies to collect revenue.

3. KWA staff may be oriented about the need of raising revenue and the methods of working with people to ensure revenue collection.

4. Appropriate system/procedure to be evolved to ensure that panchayats make the payment promptly to KWA.

9. FAULT DETECTION, REPORTING AND FOLLOW UP

9.1. Existing Arrangement

The present arrangement was introduced by SEU in 1993. A complaint book is kept in the KWA office and Panchayat Office. The SPAs or WWC member can note leaks/breaks in the complaint register maintained by Panchayat Office The KWA personnel are to visit

the Panchayat Office once in a week and to rectify the faults recorded in the register. This procedure is followed in Mala scheme. In the case of the Edappal scheme, the complaint register is kept at the KWA office, Tank site, and any person can record the complaint or send by post to KWA office or pass message over telephone.

However, while operationalising the same, the schemes encounter certain problems. The first relates to the difficulty faced by the SPAs in filling up the form meant for fault reporting. This is due to the fact that most of the SPAs are mostly neo-literates. The second relates to the delay in the follow up by KWA which results in the demoralisation of SPAs and WWC members.

9.2 Opinion and suggestions from WWC, SEU and panchayat presidents/members

9.2.1 WWC members in our sample, in general, were satisfied with the present arrangement. However, they are dissatisfied with the follow up action taken by KWA.

The reasons mentioned by the WWC members about the unsatisfactory service/follow up by KWA are:

(i) The contractors who undertake the repair work are in general, not interested in attending minor repair work, as it is less profitable to them.

(ii) The repairs are attended by inexperienced workers resulting in low quality service.

(iii) Attitude of KWA officials that do not give importance to prompt fault repairs.

9.2.2. Panchayat president/members are, by and large, satisfied with the present arrangement of fault reporting.

However, regarding follow up action by KWA they also express more or less the same views as that of WWC members. The two main complaints voiced by them in this context are:

(i) lack of cooperation from KWA; and
(ii) delays in getting the faults repaired.

They made the following suggestions to improve the effectiveness of the system:

(i) Include a KWA official in the WWC to ensure better involvement.

(ii) The KWA officials should make regular visits to project areas to detect faults and to make corrective steps.

9.2.3. Both the SEU units consider the system being followed satisfactory. However, they are dissatisfied with the results regarding fault reporting. The KWA according to them, is not giving due importance to complaints of minor nature such as leak in taps and pipes. This results in delays in fault repairing which demotivates the SPAs in reporting complaints.

The SEU units have offered certain suggestions to improve the system. These are:

(i) Activise the Panchayat Water Committee and ensure the participation of Assistant Engineer or Asst. Executive Engineer from KWA in the meetings. Such meetings should review the action taken by KWA on faults reported.

(ii) KWA should send rectification report on faults reported to their notice to the panchayat on a regular basis.

(iii) KWA should have one official solely responsible for looking into the complaints/faults and to initiate necessary follow up action in each Panchayat.

(iv) Provide adequate supply of spare parts, tools etc.at sub-divisional level to avoid delay.

(v) KWA may entrust the responsibility of minor repairs to panchayats or WWCs.

9.2.4 The opinion of KWA are of two types; one relating to the reporting system per se and the other relating to the delay or inadequacies in their service.

Some of the KWA officials expressed their doubt about the need for elaborate arrangements or channels of fault reporting. They argue that the complaints brought to their notice by any consumer, irrespective of whether it comes from WWC/Panchayat, will be treated the same.

KWA officials do admit that there are certain delays in attending the faults for which there are genuine reasons. These are:

1. Lack of sufficient funds at sub-divisional level for repairs.

2. Lack of adequate staff for monitoring and supervising the repair work.

3. Limited financial and administrative powers at sub- divisional level which causes delay in taking action.

4. Lack of cooperation from contractors in completing the work on time.

Suggestions

The study indicates that the fault detection, reporting and follow up arrangements being followed require certain modifications to make these more effective. The following are our suggestions regarding this:

1 Activise the Panchayat Water Committee. The committee should meet once in a month and review the complaints and action taken.

2. The practice of filling the complaints card in triplicate by the SPAs may be discontinued, since this is causing inconvenience to SPAs. Further, when SEU withdraws from the scene it would be difficult for any other agencies to provide these forms. When these complaint cards are discontinued, SPAs can report the fault to WWC which in turn can record it in the register maintained at panchayat.

3. The three-tier system of fault reporting involving SPAs, WWCs and Panchayats has to be retained Each one of these structures plays a specific role and are interlinked to make the reporting system function smoothly.

4. Since the SEU plans to withdraw itself from its present responsibilities vis-a-vis the various structures, it is necessary to consider alternate supportive arrangements. This is so because we feel that the various structure like SPA, and WWC have not reached the level of maturity to sustain themselves. Perhaps, the Panchayat may be in a position to take up this role. However, anticipating this problem these structures may be equipped through training/orientation during this transitional phase to perform their roles.

10. FUNCTIONALITY STUDY

10.1. Background

Functionality study has been introduced by SEU to study

a) the availability of water in public taps
b) the time during which the water is available, and
c) the quality of water supplied

The information is collected through a card specially prepared for the purpose. This card is designed to collect information for a month on daily basis for each selected stand post.

The functionality study and the data generated are essential feed back to water authorities. It helps them to see how effectively the services have reached the consumers and to plan corrective steps if there are flaws. It also makes them accountable to the consumers and encourages a healthy interaction between them and the people.

10.2 Functionality study and KWA

The effectiveness of functionality study depends on how the information has been utilised by KWA for monitoring the water supply. Unfortunately, no such effort has been taken up by KWA so far and the reports received by the executive engineers remain unattended. When this problem was discussed with KWA officials they reported that it is difficult to act upon such reports without specific instructions or orders from higher level authorities of KWA.

10.3. Suggestions

The functionality study is an important tool for monitoring the water supply schemes and the KWA can effectively use the information for improving the delivery of services Our suggestions regarding this are given below:

1. We suggest that the study should be continued even after the exit of SEU from these schemes, because it provides valuable data on how the services are delivered to the consumers.
   KWA can now take up this responsibility and continue to use the SPAs for collecting the necessary data. The cost involved in this exercise is minimum which the KWA can afford.

2. KWA may evolve an appropriate MIS that incorporates the data generated by the study.

3. The section level committee, for which orders have already been issued by the KWA, can consider this information and can instruct the respective sub-divisions to take necessary action.

4. KWA at the higher level may issue necessary orders to make it binding on the part of KWA at various levels to utilise the functionality study.

11. PANCHAYAT RAJ SYSTEM AND MANAGEMENT OF RWS

11.1. The 73rd amendment of the Constitution of India has created Panchayat Raj institutions at the Village, Block and District levels. According to this amendment, several subjects including drinking water, coming under the state governments' purview have been transferred to the Panchayat Raj institutions

11.2. Kerala Panchayat Raj Act: Provisions related to Water Supply

The Kerala Panchayat Raj Act, 1994, envisages the following changes in the context of drinking water/water sources:

All the powers relating to stand posts and work relating to water supply will be vested with the Village Panchayat. These tasks will become the rights and responsibility/liability of the Village Panchayat from the date on which this power is entrusted to them (Section 218 Sub Section 2).

Besides, Section 166 (Sub Section 1) also stipulates the following as the essential responsibilities of Village Panchayat:

i) Protection of Public Wells
ii) Digging of wells and tube wells for either irrigation or for drinking water and their protection.
iii) Implementation of water supply schemes either entrusted by the Kerala Water Authority or otherwise.

Implications

1. The Village Panchayats (VPs) will now have the entire responsibility of implementing water supply schemes and their maintenance as per Section 166 Sub-section 1. This will have immediate impact in terms of sharing of responsibilities between KWA and VPs.
2. Sharing of responsibilities may also mean sharing of cost. This again will have to be discussed at appropriate level.
3. These changes would necessitates the VPs to consider the different options of raising resources.

4. A major implication of the Panchayat Raj Act is that the VPs can now consider alternate or parallel drinking water supply schemes independent of KWA. This may result in the following changes of the existing arrangement:

i) The KWA will loose its monopoly in providing drinking water. This may compel them to be more accountable to the public in terms of adequacy and quality of water, fault repairing, fixing of water charges, etc.

ii) The KWA has to function in a cost effective manner and reduce the operational expenses.

iii) Alternate schemes initiated by Panchayats can also ensure more community participation at all levels, because such schemes will be within the reach of community. It also involves simple technology familiar and acceptable to community.

iv) The creation of alternate schemes by Panchayats may also require participatory management structures.

11.3. Implications on SEU structures

The role of the existing structures like the SPAs, WWCs and PWCs have to be examined in the context of exit of SEU from the schemes and the introduction of Panchayat Raj system.

As already indicated, none of these structures can function without the guidance and support of an external agency. Withdrawal of SEUs will definitely affect the functioning of these structures adversely.

Though the village panchayats are going to be powerful with financial resources etc. they may not be able to function effectively without the support of certain structures to provide them basic data on availability of water etc. More over, to ensure community

involvement in drinking water it is necessary to have some structures.

The SPAs representing the actual users of the public tap will continue to play a major role. It is therefore essential to maintain this structure. The PR system will open up more opportunities for the panchayats to share some of the O & M responsibilities. The SPAs can undertake minor repairs for which they have to be equipped. Appropriate training programmes to train the SPAs are essential in this context, for which the Panchayat has to take the initiative.

The WWCs may not be able to function effectively with the withdrawal of SEU. However, a committee at the ward level is necessary to provide a link between the users and the panchayat and to bring problems related to drinking water to the Panchayat. In addition to their present responsibilities, WWCs can support SPAs in ensuring minor repairs by providing the necessary materials/spare parts required for the same. The Village Panchayat can now entrust this responsibility to WWC and supply the materials/spare parts to them. It can also monitor the water supply including the conduct of functionality study at regular intervals. We therefore suggest that this structure may be continued with the necessary modification indicated above.

The Panchayat Water Committee with the President of Panchayat as its chairman is a powerful body which is defunct now. With the transfer of power relating to several subjects, including drinking water to the VP level, the PWC can function effectively. This structure can act as the apex level body to work in close liaison with the VP. It can monitor the functionality studies and advise the VP on matters relating to drinking water.

11.4. Partnership Management of RWS

The Panchayat Raj Act will open opportunities for a partnership management between

the KWA and VPs on rural water supply schemes. Sharing of such responsibilities can be done in the following manner:

i) The VPs can provide alternate sources of water by digging wells, tube wells etc. The entire expenditure can be met by the VPs.

ii) Some of the O & M responsibilities can be shared between the VPs and KWA. Major repair work can be entrusted to KWA and the minor repair work can be undertaken by the VPs. To execute the minor work the VPs can either employ contractors or create a technical section by appointing some technical staff.

iii) The VPs can collect water charges along with other taxes from the private consumers. There is already a provision in the Panchayat Act empowering the VPs on this. The water charges collected can be given to the KWA. The KWA can thus be made more accountable to the VPs.

iv) In the case of public taps, the VPs can either collect water charges from the users or they can provide water free of charge. Since the users of public tap belong to low income group the water charges can be borne by the VPs from its own budget.

12. SECTION LEVEL COMMITTEES

12.1. The Government of Kerala have issued orders to constitute Committees in each water supply section with Assistant Engineer as the Convener. These Committees are to discuss the problems related to water supply and to resolve them. The Section Level Committees have to be activated to achieve the above objective. The following are some of our suggestions regarding this:

12.2. The KWA may take a review of the progress made in constituting the Section Level Committees and may take necessary action to constitute the Committee wherever it has not been done.

12.3. The Committee may include Secretaries to Panchayats, both Village and Block, to substitute the District Council Members which will be defunct with the introduction of Panchayati Raj. A few representatives of WWCs may also be included as members in the Committee.

12.4. An appropriate MIS may be evolved to monitor the functioning of Section Level Committees.

12.5. In order to ensure the smooth functioning of the Committee, some of the powers for decision making may be delegated to the Committee.

PART I

CHAPTER I

BACKGROUND OF THE STUDY

The Operation and Maintenance Programme (OMIP) implemented by the Kerala Water Authority is aimed to improve the O&M system through a partcipatory process. There are two components in the programme; the techenical and the management aspects. The management system in turn includes the administrative, organisational, and financial aspects of the programme.

In order to improve the management system of the OMIP, a consultancy assignment was given to the Institute of Management in Government, Trivandrum.

1.1 Objectives

The following are the objectives of the consultany work:

(i) to assess the economic/financial feasibility of O&M of rural water supply schemes (RWS)

(ii) to examine the existing O&M management system of KWA, and

(iii) to suggest methods for partnership in the management of RWS schemes in the OMIP selected schemes of Mala, Choondal and Edappal.

1.2 Terms of Reference

According to the terms of reference of OMIP the consultant has to develop propositions for partnership in management of RWS in the OMIP selected schemes. This can be done by analysing the economic and financial aspects and organisation and management aspects of RWS schemes.

1.3 Methodology

1.3.1 Universe

The study covers three rural water supply schemes of KWA - Edappal, Mala and Choondal. Whereas the Edappal project is supported by the Danish government and Mala by the Netherlands -Government, the Choondal water supply scheme is a scheme of KWA.

Mala Scheme has a coverage of 6 panchayats and Edappal 5, whereas Choondal is mainly confined to one panchayat viz. Choondal panchayat. Scheme-wise distribution of panchayats in Mala and Edappal is shown in Table - 1.

Table 1 - Scheme-wise distribution of Panchayats

Mala Scheme	Edappal Scheme
Mala	Edappal
Vellangalloor	Elancode
Poyya	Tavanoor
Kuzhur	Nannamukku
Puthenchira	Vattamkulam
Annamada	

1.3.2. Sample

The study covered a sample of panchayat presidents/members, Ward Water Committee memebers and Stand Post Assistants, from Mala and Edappal Schemes. Besides, the SEU units at Trichur and Kozhikode were also included in the study.

Of the 6 panchayats in Mala, 5 were covered in the sample while all the 5 panchayats in Edappal were included.

The number of WWC members in the sample from Mala was 20 and from Edappal 13, thus making the total sample 33.

In the case of SPAs, there were 17 from Mala and 16 from Edappal making the total sample 33.

1.3.3. Data Collection

Collection of primary data from Panchayat Presidents/ Members, WWC members and SPAs was done by the consultants with the help of interview shedules prepared for the purpose. A check list was used for data collection from the two SEU units of Trichur and Edappal. (Annexures).

1.4 Organisation of Report

The report consists of two parts. Part I under 4 sections explains the background of the study, the financial aspects of KWA, tariff structure, billing and collection practices of KWA, and the O & M arrangements regarding RWS Schemes. Part II in 9 sections examine the three individual RWS scheme viz. Mala, Edappal and Choondal, a critical analysis of SEU and the structures created for RWS schemes, Panchayat and RWS schemes, assessment of willingness and ability of consumers to pay for water, fault detection, reporting and follo up, functionality study, Panchayat Raj System and management of RWS and suggestions and recommendations.

CHAPTER II

KERALA WATER AUTHORITY - FINANCIAL STATUS

2.1 Background

KWA is an autonomous body constituted by the Government of Kerala in 1984 by converting the erstwhile Public Health Engineering Department (PHED). The objectives of KWA are:

(1) plan and execute capital schemes relating to water supply and sewerage in the state;

(2) maintain water sources, transmission and distribution lines and water treatment plants in the state;

(3) undertake distribution of water and maintain sewerage schemes in the state.

It has the sole responsibility in the entire state regarding the construction, operation and maintenance as well as billing and collection of water and sewerage charges from consumers.

KWA has been successful in undertaking a number of water supply schemes since its existence and it provides piped water to more than 60 percent of the urban population and 35 percent of the rural population in the state. As on March 1993, KWA had about 1376 schemes in operation of which 40 were urban and 1336 were rural.

2.2 Financial status

2.2.1. **Income**: KWA being the sole agency responsible for water supply in the state earns its income primarily from the sale of water. The different sources from which it

receives its income are:

Water charges levied and collected from domestic, non-domestic and industrial users of the water provided by KWA

Water charges collected from panchayats, municipalities, corporations and other local bodies for the water supplied through the public taps.

Maintenance charges levied and collected from local bodies.

Other incomes from investments and advances, supervision charges etc.

Grants from Government of Kerala, which were given on a regular basis to cover the operating deficit.

The income generated by KWA from different sources during the years from 1990-91 to 1993-94 are shown in Table 1.

Table 1: **Income of Kerala Water Authority (1990-91 to 1993-94)**

Rs.in lakhs

Items	Years			
	1990-91	1991-92	1992-93	1993-94
1. Income from water supply				
(a) Domestic consumers	249.8	574.3	952.2	1259.6
(b) Non-domestic consumers	276.4	553.6	756.6	1017.8
(c) Industrial consumers	244.2	226.9	258.3	270.7
Sub-total	770.4	1354.8	1967.2	2548.1
2. Local bodies	1426.8	866.6	1098.9	1342.8
3. Sewerage	neg	neg		neg
4. Other Incomes	152.2	156.9	160.3	226.3
5. Govt of Kerala Grants	2585.0	2799.9	2858.1	3440.0
Total	4934 46	5178.2 .	6084.5	7557.2

Source: KWA Budget Estimates, 1990-91 - 1995-96.

The accruable income of KWA during these years however differs from these amount mentioned in the table. This difference was largely on account of the problems

faced by KWA in the collection of water charges. However, the situation is improving over the years and for the financial year that ends in March 1995 the actual collection surpassed the demand. The figures for the last two years about the income demanded and collected from consumers (domestic, non-domestic and industrial) are as follows:

(Rs. in lakhs)

	1994-95	1993-94
Estimate of Income (demand)	3218.4	2734.0
Income actually realised	3222.4	2650.2

(Source:KWA Budget Estimate 1995-96)

2.2.2 Revenue collection practices

KWA of late has been successful in introducing an effective billing and revenue collection mechanism. it has now evolved a cost based tariff structure that enables them to collect revenue in a systematic manner. But however, this is not being practised in the absence of appropriate implementing machinery which may also contribute to the huge gap between revenue receivable and that actually collected.

2.2.3 Expenditure/cost incurred by KWA

The expenditure incurred by KWA can be broadly categorised into Capital Cost, and Operation and Maintenance Cost.

The first category involves all items of expenditure incurred on account of constructing water supply systems - the pumping systems, treatment plants, distribution lines, storage tanks and other related items. The O&M cost on the other hand involves expenditure incurred by KWA to enable them to operate the schemes. The various components of O & M cost are: Consumption of tools & spares, Consumables Power charges, Repairs and maintenance, and Insurance Some other expenditures are booked

separately but also becomes part of the operational expenses. These are:

Establishment expenses (payment to employees, office expenses, and other administrative expenses),

Interest on loans, and

Depreciation.

The accounting practice followed by KWA book each of these items under separate heads and under specific code numbers. For the purpose of calculating the total expenditure over years KWA apportion a part of the establishment expenses to capital works in progress.

The expenditure incurred by KWA during the years from 1990-91 to 1993-94 are given in table 2.

Table 2: **Expenditure of Kerala Water Authority (Rs. in lakhs)**

Expenditure	1990-91	1991-92	1992-93	1993-94
1. Operating and Maintenance Expenditure	1380.9	1758.9	2334.7	2829.3
2. Establishment and other expenses	3067.9	3282.7	3651.5	4196.1
3. Interest	2135.0	2619.9	3234.6	4111.2
4. Depreciation	1193.1	1173.4	1158.7	1148.8
Total	7776 9	8834.9	10379.6	12285.4
Less: Establishment Expenses allocated to Capital works	1182.7	836.5	1219.4	1157.6
Total	6594 2	7998.5	9160.2	11127.8

Source: *KWA Budget Estimates 1990-91 - 1995-96.*

The two components of cost, depreciation and interest are different in nature. KWA calculates depreciation on a straight line basis at a percentage depending on the estimated life of the asset. The loans taken by the KWA need to be paid interest at rates that it has been borrowed.

2.2.4 Comparison of Income and Cost

The comparison of income and cost is explained in the following table.

Table 3: **Comparison of Income and Expenditure of KWA**

(Rs. in lakhs)

Item	1990-91	1991-92	1992-93	1993-94
1. Total Income	4934.5	5178.2	6084.5	7557.2
2. Total Expenditure	6594.2	7998.5	9160.2	11127.8
3. Excess of Expenditure over Income	1659.7	2820.3	3075.7	3570.6

The excess of expenditure over income or the operating deficit has been a permanent feature of KWA since its inception. It has been managing this situation with the help of Government of Kerala Grants which has now become increasingly difficult to tap. This has compelled KWA to look seriously into its financial conditions resulting into the introduction of a tariff system which if followed would nullify the deficit by 2001 AD.

2.3 Cost per unit of water

The total volume of water produced and distributed by KWA is difficult to assess with exactitude. However, an exercise in this direction was attempted by the Ferguson & Co. when they conducted a study on the Cost and revenue of KWA in 1992 [1]. This study has estimated the daily volume of water produced by KWA in the range of 500-600

[1] Final Report on Cost and Revenue Study, Vol.I, A.F Ferguson & Co, Madras, 1992.

mld. Calculations were then made to find out the income per unit volume of water and also the O & M cost per unit volume of water. These are given below. The income per unit volume of water (excluding grants) for the year 1989-90 are:

a) Rs. 1.73/KL for the water produced

b) Rs. 2.31/KL for the water distributed (after allowing 25% loss in distribution)

The study has also calculated the O & M cost per unit of water for the year 1989-90. These are:

(a) Rs. 2.56 per KL for the water produced and

(b) Rs. 3.41 per KL for the water distributed after allowing 25% loss in distribution.

The difference in the cost per unit volume of water produced/ distributed and the income it fetches to KWA is significant. KWA has taken note of this aspect and initiated certain measures to augment the income like increasing tariff rate and abolishing free allowances of water.

2.4 Issues and Suggestions

The financial status of KWA, as revealed from the study, has the following dimensions:

(i) The expenditure incurred by KWA on account of direct cost far exceeds the income it generates from the sale of water. This has been a perennial problem for KWA since its inception.

(ii) The KWA has taken certain steps to narrow down the gap between income and expenditure. By and large, these measures pertain to increasing income through enhancing the water charges and streamlining the collection process. However, little has been done on bringing down the cost The concept of cost effectiveness has not yet gained acceptance even at the highest level.

iii) KWA has been facing difficulties to realise its income accruable from its consumers. This is evident from the difference between income demanded and income collected. The only exception was the year 1994-95 when the actual collection exceeded the demand which was largely on account of the arrears they were able to collect during the year. KWA is however, hopeful that the gap will be narrowed in the forthcoming years.

iv) KWA has been unable to collect water charges from local bodies. The arrears are now running in crores which force the Government to give a portion of the Government grant budgetted for local bodies directly to KWA.

v) KWA now follows an account mannual that facilitates information flow for smooth decision making. It is also developing an MIS with regard to financial details that makes data collection, processing and retrieval easy.

The above dimensions of the financial status of KWWA also indicate the need for introducing certain changes to make it financially viable. These are broadly explained below:

1. The streamlining of revenue collection practices and the introduction of cost based tariff structure definitely had increased the income of KWA. This however, is not enough unless equally serious measures are taken to control and reduce the cost, which requires:

(a) A detailed cost analysis to identify the categories of expenditure that requires attention.

(b) Study on the management aspect of the organisation to suggest changes in the structure of the organisation and the systems/ procedures to be developed to make managerial functions more effective.

(c) An analysis of the technical aspects that can lead to cost reduction, like preventive maintenance, use of cost effective technologies etc.

2. The revenue collection practices that is being followed in KWA itself can be restructured without causing any additional burden. An organisational study is required in this context in terms of roles and responsibilities.

3. KWA requires a different strategy and approach with regard to the collection of water charges. They need to convince people and their representatives about the cost of producing drinking water and their responsibility to cooperate with KWA in maintaining this essential service. This requires an attitudinal change in KWA which makes it more consumer centred and people oriented. Such changes are more relevant in the context of Panchayat Raj systems that is to be implemented shortly.

CHAPTER III

TARIFF STRUCTURE, BILLING AND COLLECTION PRACTICES OF KWA

3.1 Existing practice

The procedures practised by KWA regarding the billing and collection of water charges are largely guided by the Kerala Water Supply and Sewerage Act of 1986. It now follows a pattern where all domestic and other categories of consumers are billed on a monthly basis according to the actual quantity of water consumed. Each consumer was supplied with a water meter and the meter readers take periodic readings to calculate the volume of water.

The revenue accounting staff at the section level are responsible for billing and collection of water charges.

This being the procedure it was not strictly practised by KWA for quite some time. This was partly because KWA took some time to bring the different water supply schemes managed by local bodies into its fold and streamline the operations. The take-over responsibilities of billing and collection were completed by 1991 and since then it follows a standard pattern throughout the state.

The system that was practised before 1991 had certain drawbacks. The first was the non-functioning of water meters installed by the KWA. Consumers were then charged on the basis of certain previous averages or at the rate of certain minimum charges. Second, in the cases where meters were functioning, the consumers were expected to pay only after the receipt of the bill giving them ample time for payment. As there was no incentive or compulsion to pay the water charges on time the collection

was always low than estimated. Since these difficulties persisted even after 1991, KWA has introduced a system called the Provisional Invoice Card (PIC) system in few selected centres. As it proved effective, KWA is now planning to introduce this system throughout the state.

3.1.1. Provisional Invoice Card System (PIC)

Under this system a fixed amount is estimated on the basis of water consumption for six months to one year and the consumers were issued a Provisional Invoice Card indicating that they should pay the amount as advance water charges every month without being served a demand notice or bill. In those cases of consumers in the domestic category where water meters were not working they were charged on the basis of minimum charges fixed by KWA which currently is Rs.17/- per month per connection.

The water charges are collected at KWA offices or at banks appointed for this purpose by KWA. When meter reading is taken later, which has to be done once in six months, the amount payable to KWA based on actual consumption is worked out. If this amount is greater than the amount already paid KWA issues an additional bill to the consumers to collect the arrears. If the average consumption increases consistently the PIC card will be reissued indicating the arrears amount and the revised fixed rate.

KWA offers incentives to consumers who pay the full year's water charge as advance. They are now entitled for 5 percent reduction on the amount they have to pay.

The responsibility of revenue collection rests with the sub-divisions. One Junior Superintendent is to supervise the collection operations with the assistance of clerical staff and meter readers. According to the present norms a clerk deals with a minimum of 600

consumers. The meter readers in turn are expected to cover a minimum of 600 connections a month and taking two reading per meter in a year.

The PIC system which is being implemented throughout the state has certain advantages. Firstly, it saves considerably on account of meter reading expenses. The system requires few meter readers as the reading is taken twice a year. Secondly, the workload connected with billing is considerably reduced as the consumers pay a fixed rate in advance without receiving any demand notice or bill. This can also avoid the delay and ensure regular payment of dues by consumers at an appointed date.

KWA is now switching over to computerised billing and collection system which was long overdue. This will enable KWA to not only monitor the revenue collection process but also to take quick analysis and decisions. Though it is restricted to Trivandrum and Cochin it will be eventually introduced through out the state.

3.2 Tariff structure

The state of Kerala did not have a uniform tariff rate for water till April 1991. Municipalities and other local bodies who were then responsible for drinking water supply provided water at rates that vary from Rs.0.40 to Rs.1.00 for domestic connections per every 1000 litres of water. The consumers were also entitled for large volumes of free water.

The situation had changed drastically in 1991 when KWA took over the entire water distribution responsibilities in the state. For the first time calculations were made on the basis of costs involved in supplying the water and also on the basis of sustainibility in the absence of decreasing financial assistance from Government of Kerala. The water

rates were then revised, made it uniform and fixed minimum rates for consumption.

KWA has introduced another revision in their tariff structure which came into existence from 1st June 1994. As in the previous case the revised rates were applicable throughout the state. The new rates are shown in Table 1

Table 1 **Tariff Rates of KWA w.e.f. 1st June 1994**

Category	*Tariff Rate*
A. Domestic category	
1. Upto 10,000 ltrs	Minimum charges Rs.17/month
2. 10,000 ltrs to 30,000 ltrs	Rs. 17.00+@3.45/1000 ltrs in excess of 10,000 ltrs
3. 30,000 to 50,000 ltrs	Rs.63/- + Rs 3.45/1000 ltrs in excess of 30,000 ltrs
4. Above 50,000 ltrs	Rs. 132/- +Rs.4.60/1000 ltrs in excess of 50,000 ltrs
B. Non-domestic category	
1. Upto 50,000 ltrs	Minimum charges Rs. 58/month @Rs.4.60/1000 ltrs
2. Above 50,000 ltrs	Rs.230/- + @ Rs.6.90/1000 ltrs in excess of 50,000 ltrs
C. Industrial category	
1. Per entire consumption	Minimum charges Rs.115/month @ Rs.6.90/1000 ltrs.

The tariff rate, as seen from the table, increases progressively as consumption increases. Consumers in the domestic category are thus divided in to four slabs where

each slab has a minimum rate. Consumption of water in excess of this minimum is charged at a fixed rate for every 1000 ltrs till the consumption level touches the next higher slab. Non-domestic category has two slabs while industrial category has been charged on the basis of actual consumption.

KWA also proposed an increase in the tariff at the rate of 15 percent per year. This was done with view to narrow down the operating deficit which has been a permanent feature of KWA all along. In fact, the revision of tariff has been motivated by these considerations and KWA expect to generate adequate income to minimise the deficit to a break even level by the year 2001 with this yearly increase.

3.2.1 Tariff for public taps

The above being the tariff structure for private connections, tariffs for public standposts are fixed on different considerations. Instead of charging on the basis of actual volume of water consumed, KWA has fixed a flat rate of Rs. 875/- per standpost per year.

3.3 Problems related to tariff and billing practices

The KWA faces several problems related to revenue collection and billing practices. These are:

1. *Non-realisation of water charges from consumers*

In many schemes of KWA the revenue collected from different categories of consumers fall short of the amount that was due to it till 1994-95. The situation however varies from scheme to scheme. In Mala for example, the actual collection lags much behind the estimate or demand in all categories of consumers - domestic, non-domestic,

industrial and public taps (local bodies)[2]. In Edappal, as it is in the first phase, it does not have private connections; and was not able to collect any income at all from local bodies. Choondal, which perhaps is an exception, was able to collect the amount demanded from private consumers but failed to collect the income due from local bodies.

2. *Ineffective billing practices*

The KWA, in general, does not have any effective billing practices. The case of Mala and Choondal is indicative of this. Regarding the collection of water charges from private domestic consumers, both the schemes collect minimum charges. Consumers are informed to remit this minimum charges on a monthly basis and no bills or demand notices were served to them after verifying the actual consumption. In both schemes inadequacy of meter readers are cited as the reason for this. Since the number of non-domestic and industrial category connections are minimum the billing is done fairly regularly in these cases. None of the panchayats were served with any demand notice on a regular basis. KWA officials argues that it has no use as panchayats deliberately commit default.

3. *Inadequate administrative arrangement at sub-divisional level*

The sub-divisions in general do not have a clear cut division of responsibilities for its staff. This is more conspicuous in the case of revenue collection functions. Though a Junior Superintendent is to be assigned this task with adequate supporting staff depending upon the number of connections, and they are to function as a cell, this was seldom practised as these officials are assigned several other responsibilities. This often

[2]For the year 1994-95, for example, the demand for water charges from the three categories of consumers, domestic, non-domestic and industrial, were Rs.273953, Rs.83920 and Rs.41957 respectively but the actual collection were Rs 266122, Rs.36527 and Rs.34308, according to the information supplied from the Divisional Office.

forces the officials not to attend the revenue collections responsibilities they are expected to perform.

4. *Inadequate emphasis on cost recovery*

Our discussion with KWA officials at sub-divisional level have given the impression that cost recovery or collection of water charges is not their priority concern. This could be a hangover from the past when KWA was supplying water almost free of charge. The attitude is changing, though at a slow pace because of the realisation that KWA has to raise its own resources.

3.4 Suggestions

The KWA has already initiated certain measures to augment the revenue collection and bridge the gap between expenditure and income. The recent revision in tariff is one such measure in this direction. Perhaps more significant is the introduction of Provisional Invoice Card System through out the state. These measures have already started turning the table at macro level and KWA is reasonably confident that they will nullify the deficit by 2001 AD. Some of the measures that can be experimented at scheme level are as follows:

1 Create a revenue collection cell at sub-divisional level with one administrative staff at junior superintendent level exclusively to supervise the operations. He may be assisted by atleast one more staff and they may not be burdened with other responsibilities except revenue collection.

2. Absence of meter readers is a perineal problem for many water supply schemes. This leads to problems not only to KWA but also to consumers and can be solved if the KWA allows the sub-divisions to experiment or try out measures like providing incentives to other categories of employees to do this task. They can also entrust this responsibility on a contract basis under the supervision of the work superintendent.

3. KWA should encourage panchayats in their efforts of cost recovery from the standpost users. The suggestion is made in the context of the cost recovery/sharing experience initiated by SEU, North, at Kondotty in Malappuram district where neither the KWA nor panchayat were able to utilise the advantages. The amount collected as a result yet lies with the bank and not credited to KWA.

4. The provisional invoice card system and the computerisation of billing and collection of water charges need to be introduced in all schemes. This can streamline the collection process effectively.

5. The KWA is now undergoing a transitional phase from an agency that supplies piped water almost free of charge to one that collects money for its services. The change is difficult to assimilate both for the public and for the KWA officials. They need to be oriented to get them tuned to this reality. KWA and panchayats may take up this responsibility and conduct regular orientation/training programmes to equip them to perform this role.

6. The Panchayat Raj System which is expected to be implemented in the State may also have its impact on the billing and collection practices of KWA. However, such changes depend largely on how the local bodies interpret the vague clauses and assert their right on matters regarding drinking water. The existing provisions in the Panchayat Raj Act merely state that the Village Panchayats have the overall responsibility of providing drinking water to its people and hence have to oversee the water supply schemes implemented by KWA in their respective panchayats. This provision as such would not change much the existing arrangements regarding tariffs and collection practices. But it has several possibilities such as creating alternate schemes, especially location specific ground water schemes and also to insist on payment according to the actual use of water. Such possibilities are further elaborated when Panchayat Raj institutions and KWA are discussed.

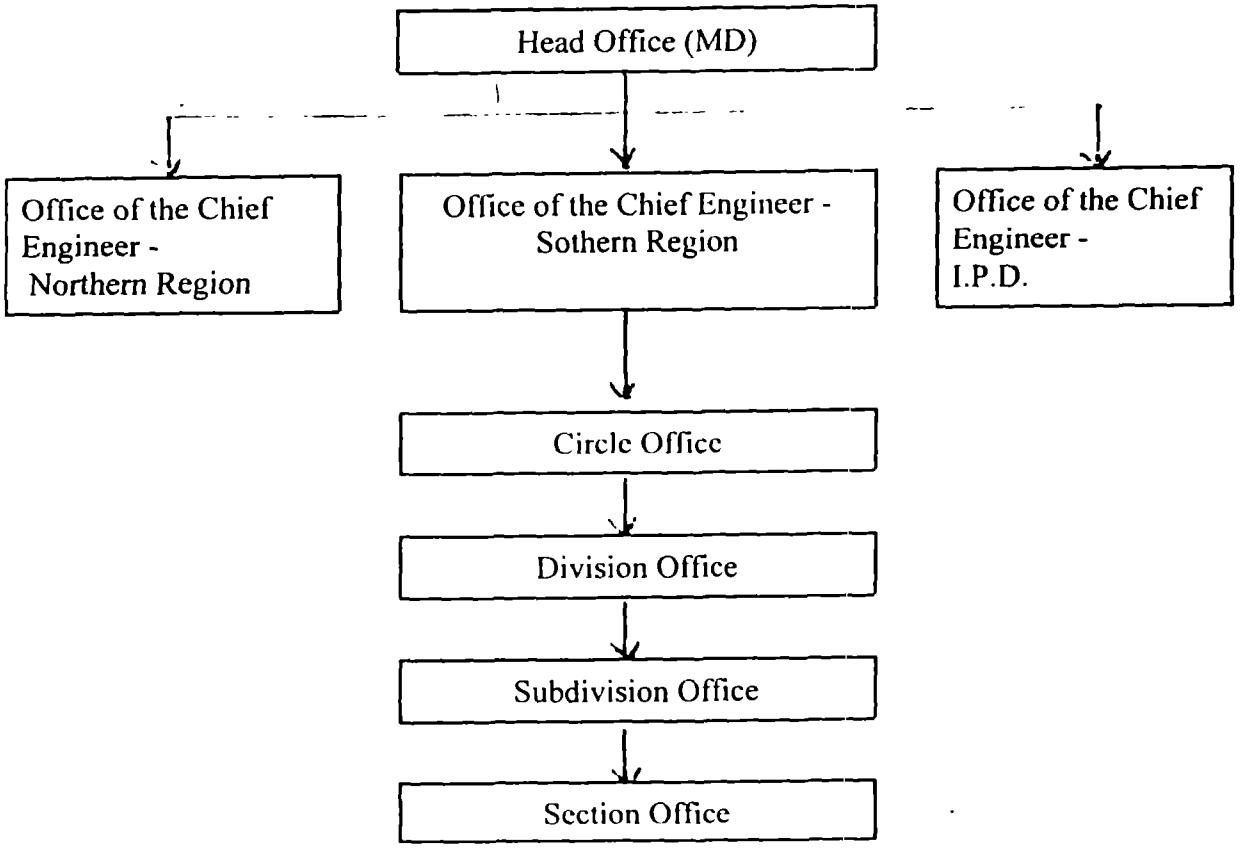
CHAPTER IV

KWA AND THE OPERATION AND MAINTENANCE ARRANGEMENTS

KWA as the agency responsible for the supply of drinking water throughout the State performs two major functions; the planning and execution of water supply schemes and their maintenance and operation. The first, relating to the planning and execution, traditionally assumes greater importance perhaps because of the extent of expenditure involved and the professional expertise required to implement such schemes. By and large, KWA is oriented towards this and considers the creation of facilities as their major responsibility. Operation and maintenance of the schemes are generally taken as routine, and receives relatively lesser attention.

4.1. Organisational Arrangement of KWA

The organisational structure of KWA is explained in the following chart:



While the planning, supervising and controlling functions are done at the higher level at the head office and at Chief Engineers level in the Regional Offices, the execution of schemes as well as its operation and maintenance were done at divisional and sub-divisional level. The crucial role in operation and maintenance is however, performed by the Assistant Engineer.

4.2. O & M arrangements

The Assistant Engineer (AE) is in charge of the O & M of schemes. He is responsible for the day-to-day aspects of operation and maintenance of schemes. He is assisted by administrative and technical staff in the categories of supervisors, overseers, electricians, clerks, watchmen etc. KWA now follows a system of getting the repairs done through contractors but the AE supervises these repairs as he is ultimately responsible for such tasks.

The operating responsibilities are mainly undertaken by the technical staff. Their functions are:

the measurement of water flows and controlling the quantity

ensuring water quality, administering the chemicals used

monitoring and regulating the energy consumption

registering consumers' complaints as well as faults reported by the standpost users, local bodies or others, and

recording of data through various registers, worksheets etc. for ensuring proper monitoring.

Another task of the operating staff is to update as built drawings to help to do the maintenance and repair works efficiently. In short, the operating staff are expected to

closely monitor the water demand, quantity of water delivered, quality of water, loss in distribution through leakage, use of chemicals, electricity consumption and consumers' complaints.

The maintenance and repairs are generally entrusted with contractors but under the supervision of the operating staff. Regarding preventive maintenance the tasks are largely to keep the systems efficient by proper lubrication, greasing, replacement of oil and worn out parts etc. while the corrective or emergency maintenance are performed on the basis of the nature of the problem. The operating staff are also expected to keep record of the maintenance and repair work which is essential for the proper management of schemes.

4.3. Problems related with the O & M arrangements

The problems faced by KWA with regard to O & M of the water supply schemes are as follows:

1. The low priority assigned to O & M responsibilities by KWA.

   KWA as we could gather from our discussions with officials at different levels, consider the planning and execution of water supply schemes as their main responsibility. It is justifiably so because of the number of schemes it takes up for execution at any point of time and the number of people, as well as money involved in such operation. It also takes with the agency's professional background and competence. The operation and maintenance responsibilities of the schemes therefore, have been considered routine. However, this attitude has undergone certain changes from 90's as KWA is forced to run the schemes in a viable and sustainable manner in the context of the shrinking governmental support.

2. Lack of adequate number of staff to perform the operation and maintenance tasks

In several schemes of KWA , as admitted by the KWA officials, there are vacancies at operational level that makes it difficult to run the schemes satisfactorily. The three schemes figured in the study provided ample proof for this where the vacancies average around fifty per cent of the total sanctioned positions.

3. Lack of flexibility to take decisions at sub-divisional level

These problems relate to the existing procedures of KWA where the AE is restricted to take decision on matter regarding expenditure that exceeds the limit and of buying spare parts or performing other operational responsibilities.

4. Inadequate fund for maintenance and repairs

Apart from the difficult procedures, availability of fund itself for operation and maintenance is a problem. The maintenance activities, especially preventive maintenance, get ignored due to this contributing to heavy expenditures in future.

5. Lack of orientation and training for operational level staff

Not only that the number of staff is inadequate they are also not trained to take up the operational responsibilities in an efficient manner. In several schemes crucial functions were taken care off by staff who are taken on contract basis.

4.4. Suggestions

1. Since 1990, KWA has been gradually changing its attitude towards operation and maintenance. However, the pace needs to be accelerated and the officials may be imparted training to manage the scheme in a viable and sustainable manner. They need to be trained to run the schemes in a cost-effective, and financially viable manner with the involvement of people who are the consumers.

2. Adequate support may be provided to the operating staff in terms of modifying the existing procedures to make decision-making possible at lower level. KWA also should develop manuals of system and procedures in this context.

3. Steps may be taken to identify the requirement of staff for performing operational tasks and these vacancies may be filled at the earliest. Alternatively, more of the operational and maintenance function may be entrusted with contractors under the supervision of AEs.

4. KWA may encourage the involvement of people and their representatives in local bodies in the operation and maintenance of schemes. This can reduce the burden of KWA in several aspects and will help run the scheme more efficiently than before.

PART II

CHAPTER V

INDIVIDUAL RURAL WATER SUPPLY SCHEMES

5.1. Rural Water Supply Scheme - Edappal

5.1.1 Background

The scheme was taken up in 1985 with the assistance of the Danish International Development Agency. The work started in 1987 and took seven years to technically commission it on 23.8.1994.

The Edappal scheme plans to provide water supply facilities in Edappal and four adjoining panchayats of Vattakkulam, Thavanoor, Alankode and Nannamukku covering an area of 125 sq kms.

The source of water is the Bharathapuzha river from where it is collected through infiltration gallery of 250M long to a well of 8M diameter. The water is then pumped to an elevated tank of 10 lakh litres capacity at Thrikkannapuram. The coverage of the scheme in terms of distribution line and population is as follows:

Table 1.1 **Distribution of Water and Population Covered**

Area	Lenghth of distribution line	Population covered*	No. of taps commissioned
Zone I	1,48,000 M	70291	393
Zone II	56,000 M	32560	155
Zone III	83,000 M	52473	197
Gravity main	13,700 M	--	--
Total	3,00700	155329	739

Source: *Report on Danida aided Water Supply Schemes to Edappal and adjoining Panchayats P.H. Division Edappal, 1995.*

*These population figures taken from the report obtained from KWA sub-division Edappal are presumably projections based on 1981 census The total population of the five Panchayats in the scheme according to the 1991 census is only 130624, which is considerably below the estimate The actual demand for water based on these figures are attempted elsewhere

5.1.2 Cost of Construction

The initial estimate for the scheme was about Rs.330 lakhs which was later revised to Rs.392.14 lakhs. However, the construction cost is estimated to be Rs.897 lakhs, when the project will be completed with modifications to provide 90% coverage. The escalation in cost was largely due to laying of an additional PVC pipe line of 167 kms to ensure the larger coverage. The project incurred an expenditure of Rs.848.76 lakhs till March 1995.

5.1.3 O&M Cost

The O&M costs incurred by the project during the period 1992 to 1995 are explained in table 1.2.

Table 1.2 **O & M Cost during 1992-95** (Rs.)

Year	O&M Cost
1992-93	13,59,855
1993-94	21,56,920
1994-95	38,36,420

Details of O&M cost for the year 1994-95, during which time the project was technically commissioned, is taken up for detailed analysis. The O&M component of the project are:

1. *Salaries of employees*
   (Account Code ranging from 3311 to 3319 which take into account all salaries and allowances like CCA, HRA, Bonus, leave surrender etc)

2. *Wages of NMR employees*
   (Account Code ranging from 3321 to 3329)

3. *Maintenance Expenses*

(Water supply - Repairs and Maintenance R&M 321)

4. *Operating Expenses*

(Consumables (313) like fuel, chemical lubricant etc. and utilities (314) like power charges)

The O&M expenses incurred during 1994-95 are as follows:

Table 1.3 **Components O&M Expenditure during 1994-95**

Sl. No.	Items	Amount (Rs.)	% to total
1.	Pay and allowances	14,10,975	36.8
2.	Electricity, fuel	8,95,834	23.4
3.	Chemicals	96,520	2.5
4.	Repairs & Maintenance	14,33,091	37.3
	Total	38,36,420	100.0

Two major components of O&M expenses are pay and allowances and repairs and maintenance both of which individually accounts about one-third of the total expenses. Power charges comes second with about 23 percent.

5.1.4 Water Supply

The scheme is in its initial phase and was undergoing the trial runs till it was commissioned in 1994. The ultimate water demand as per the original project document is estimated to be about 10.8 mld with a per capita supply of 55 lpcd.

The total volume of water produced and distributed during the year 1994-95 is as follows:

Table 1.4 **Production of Water (from 1.4.94 - 31.3.95)**

	(000 litre)
Zone I	75,00,930
Zone II & III (Gravity Main)	57,87,400
Total	1,32,88,33

Since there were no private connections of any category the water produced during this period was supplied through the 739 public taps spread over the different panchayats.

5.1.5 Demand for water

The population of the five Panchayats according to the 1991 census are as follows:

Alankode	-	26927
Thavanoor	-	22303
Vattakulam	-	28469
Edappal	-	27817
Nannamukku	-	25108
Total		130624

If the annual rate of growth of population is 1.398[3] the projected population for the year 1994 will be 1,36,102. The demand for water based on this projection is calculated as follows:

[3] Census of India 1991, Series-12, Provisional Population Tables, Government of India.

a.	Population to be covered for calculating demand for water (90% of the total population)	1,22,498
b.	Population to be provided water through public taps (60% of (a)	73,495
c.	Population to be provided with private connections (40% of (a)	48,996
d.	Demand for water for public tap users @40 lpcd	1073 mlpa
e.	Demand for water for private connections @70lpcd	1252 mlpa
f.	Total demand for the year 1994-95	2325 mlpa

The demand for water against the projected population from the year 1995 to 2011 and the effective demand for water (90% of the total population) at an average rate of 55 lpcd is worked out in the table: 1.5

Table 1.5 **Population and demand for water (1995-2011)**

Year	Population	Demand for water(mlpa)
1995	137928	2482
1996	139754	2512
1997	141580	2555
1998	143406	2592
1999	145232	2628
2000	147058	2665
2001	148884	2701
2002	150710	2738
2003	152536	2774
2004	154362	2774
2005	156188	2810
2006	158014	2847
2007	159840	2884
2008	161666	2920
2009	163492	2957
2010	165318	2993
2011	167144	3030

5.1.6 Income from Water

Edappal Scheme is yet to generate income. Though water is supplied through the 739 public taps, panchayats have not yet begun to remit the water charges to KWA, eventhough they have been served with notice for payment as reported by the Panchayat Presidents/members in our sample.

As regards the income it can generate at present, the source is confined only to the public taps. It was envisaged in the beginning that the scheme will provide private domestic connection by May 1995 which however could not be realised because of the technical and administrative problems.

The Divisional Office at Edappal which supervises the scheme has not made any concrete plans about the number of house- connections, non-domestic connections and industrial connections it can provide in the five panchayats. In the absence of any such calculations the income it can generate for the year 1994-95 will be:

875 x 739 = Rs.6,46,625

The above estimate of income accruable to KWA is based on the existing tariff rate. The total demand for water in the case of public tap users for the year 1994-95 was estimated to be about 1073 mlpa. The total volume of water produced during this year is 1328 mlpa and after allowing 25% of this as distribution loss the water available for public tap users will be only 996 mlpa. This indicates that the public taps are not getting adequate water and the tariff that is fixed are not justified in this case.

5.1.7 Comparison of Cost and Income

The O&M cost and the income that can be generated is explained in the following table.

Table 1.6 **O&M Cost and Income of Edappal Water Supply Scheme (1994-95)**

O&M Cost	Rs.38,36,420
Accruable Income from water produced (Public taps)	Rs. 6,46,625
Deficit	Rs.31,89,795

5.1.8 O&M Cost and income per unit volume of water

The current production of water in the scheme for the year 1994-95, ie. from 1.4.94 to 31.3.95, is about 1,32,88.3 lakh litres. The cost incurred to produce this water being Rs. 38,36,416 excluding depreciation and interest, the cost per unit of water works out to be Rs. 2.9 per 1000 litres.

The above estimate is based on water produced at source. If we deduct the loss of water in transmission and distribution, which approximate about 25% of production volume, we get the volume of water distributed. In Edappal therefore the water distributed during the year 1994-95 will be 9966.2 lakhs litres. The per unit cost of water distributed in that case is Rs. 3.8.

Regarding income, KWA was to receive from the Panchayats a sum of 6,46,625 rupees as water charges for the 739 public taps it provided during the year 1994-95. As there were no other categories of consumers during this year the total volume of water

produced, which is 1329 mlpa is supplied through these public taps. The income accruable to KWA for every 1000 litres water it produced therefore, will be only 0.49 rupees. In the case of water distributed, ie., allowing 25 per cent for distribution loss, the income per 1000 litres of water distributed will be 0.65 rupees.

The comparison of O & M cost and income per unit of water produced and distributed therefore indicate a deficit of Rs.2.41 and 3.16 respectively. Table 1.7 explains this.

Table 1.7 **Cost and income of water (1994-95)**(in rupees)

O & M Cost and Income per 1000 litres of water			
	Cost	Income	Deficit
Produced	2.9	0.49	2.41
Distributed	3.8	0.64	3.16

5.1.9 Financial viability of the scheme

As evident from the income and expenditure analysis, the Edappal Scheme currently incur a loss of about 31,89,791 rupees. However, this is only the initial phase which to a certain extent can be considered as an extension of the trial phase. Moreover, it has been reported that during 1994-95, production of water was less than the anticipated level due to unexpected long pump break down. This too might have contributed to the high deficit as it could push up the repair cost during this period. When the scheme is fully operational as visualised in the plan document, the Edappal Scheme plans to produce about 10.8 mld and serving a population of about 1 96 lakhs in the year 2011. The annual production of water at that time therefore will be 3942 mlpa. If this target has to be achieved over a period of 17 years from 1994-95 the production of water has to be

increased substantialy from the current level of 1329 mlpa. Assuming that the increase over the years is uniform, the quantity of water to be distributed, after allowing distribution loss, every year beginning from 1994 is as follows:

Table 1.8 **Estimate of water to be distributed as envisaged in the plan document**

Year	Estimate of water to be distributed(mlpa)
1995	1112
1996	1227
1997	1343
1998	1458
1999	1573
2000	1688
2001	1804
2002	1919
2003	2034
2004	2150
2005	2265
2006	2380
2007	2495
2008	2611
2009	2726
2010	2841
2011	2957

If the production increases as envisaged in the plan and also assuming that the increase is uniform, the scheme can consider the following options to bring down the deficit:

1. Keeping the number of public taps at the present level and distributing the entire additional production through private domestic connection.

2. Distributing the entire additional production of water at the rate of 40% for private domestic connections and 60% for public taps.

Under the first option every year an additional amount of Rs 1,95,500 can be

generated from private connections assuming that the minimum charge of Rs.17/10,000 litres of water can be collected. The deficit in that case can be wiped out in about 16 years time.

The other option can generate an average income of about Rs.94825 annually and will take several more years to cover the deficit. (If a public tap has to serve a pupulation of 250 persons, the demand for water per tap will 10000 lpcd or 3.65 mlpa. Since every year 69 mlpa water will be available for distribution to public taps a total of 19 Standposts can be added every year. The income per year therefore will be 19x875 = 16625. Water distributed through private connections will be charged @ 17/10000 litres and will yield an additional income of Rs.78200).

Based on the projected population over ten years an attempt has been made to calculate the number of public taps that is required to cover 60 per cent of the eligible population on the assumption that a tap has to serve 250 persons. The number of private connections required for the rest of the population is also calculated. Table 1.9 present these estimates. It should be noted that the number of public taps in Edappal during 1994-95 itself far surpasses the maximum number of taps required for the population. KWA therefore has the justification to distribute the entire additional production of water to individual consumers that ultimately can help them to recover the deficit faster.

Table 1.9 **Estimates of population and the number of public taps and private connections required**

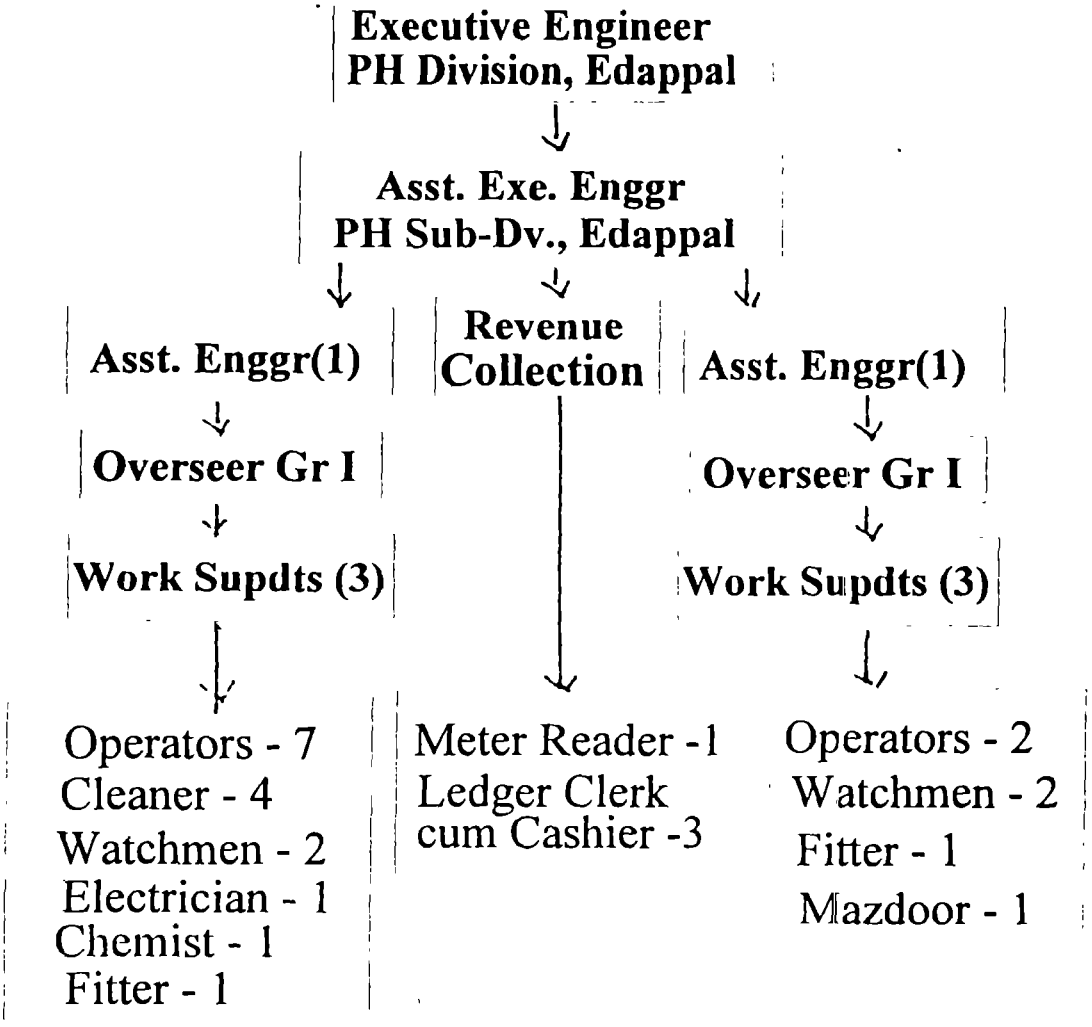
Year	Population	Maximum number of public taps	Maximum number of private connections
1994	136102	294	9799
1995	137928	298	9931
1996	139754	302	10062
1997	141580	306	10192
1998	143406	310	10325
1999	145232	314	10457
2000	147058	318	10588
2001	148884	322	10720
2002	150710	326	10851
2003	152536	330	10982
2004	154362	334	11113
2005	156188	338	11244
2006	158014	342	11375
2007	159840	346	11506
2008	161666	350	11637
2009	163492	354	11768
2010	165318	358	11899
2011	167144	362	12030

5.1.10 **O&M Arrangements**

i **Organisational arrangement of the scheme**

The scheme has an elaborate staff pattern with an Executive Engineer at the top assisted by an AEE and two AEs There are two overseers of 1st grade, 6 work superintendents and 28 other operating staff. The organisation arrangement proposed for the Edappal Scheme is as follows:

ORGANISATIONAL CHART



While the above plan is the proposed arrangement, there are several vacancies in crucial areas of operation. This is explained in the following table:

Table 1.10 **Proposed and actual staff position (operating staff only) in Edappal**

Sl. No.	Category	Proposed staff strength	Existing staff strength	% of vacancy
1.	Operators	9	7	22
2.	Cleaners	4	3	25
3.	Watchmen	4	-	100
4.	Other categories (including electrician, chemist and fitter)	5	1	80
Total		22	11	50

sourcce: KWA Sub-division, Edappal

ii **Responsibilities**

The responsibilities of the staff are demarcated into 3

(1) Repairs and maintenance of sump and pumping main, Gravity main II and Distribution to Zone II and III.

(2) Repair and maintenance of intake Well and pumphouse, Substation, Pumping main Gravity I, Distribution to Zone I, Electrical work of sub-station, pumps and motors and water quality testing.

(3) Revenue collection

iii. **O & M procedures**

Though these are the major tasks to be performed by the subdivision, individual responsibilities or job charts, reporting system, monitoring and control procedures etc. are not spelt out with clarity There are, as far as we could gather, no written procedures

but follows as a routine the old PHED manuals of Government of Kerala.

5.2. Rural Water Supply Scheme - Mala

5.2.1. Background

Mala scheme was taken up in the year 1985 for implementation with the support from the Royal Netherlands Government. The scheme was designed to provide safe potable water to six panchayats from the two taluks of Mukundapuram and Kodungalloor of Thrissur district. These panchayats are

Mala (28.35 sq. kms)
Annamanada (25.00 sq.kms)
Kuzhur (19.11 sq.kms)
Poyya (19.78 sq.kms)
Puthenchira (22.29 sq.kms)
Vellangallore (26.61 sq.kms)

The source of water for the scheme is the Chalakudy river where the water is tapped at Vynthala by constructing an intake well. The distribution net work for the six panchayats were divided into 4 zones each having an independent storage reservoir.

The scheme is intended to benefit the entire population of Mala and adjoining panchayats which is projected to increase to 203752 in 2011 AD. The ultimate water demand is thus worked out to 11.2 mld if the per capita supply rate for water is taken as 55 lpcd.

5.2.2 Cost of Construction

The initial estimate of the project was Rs. 341.12 lakhs. This was later revised to Rs.585.851 lakhs. The cumulative expenditure as on 31.12 1994 has been Rs. 547.25 lakhs and the scheme has budget provision to spend another Rs.90.91 lakhs during 1994-95. More than 90 per cent of the work has been completed by 1994 and the scheme will be fully commissioed by December 1995.

5.2.3 O&M Cost

The O&M costs incurred by the project during the last two years are as follows:

Table 2.1. **Of M cost for the years 1993-94, '94-95**

Year	O & M Cost (Rs.)
1993 - 94	27,44,936
1994 - 95	29,68,268

The various components as in the case of other KWA schemes are:

1. Salaries of Employees including allowances like CCA, HRA, bonus, leave surrender etc.

2. Wages of NMR employees and other allowances due to them.

3. Maintenance expenses including repairs for the water supply system.

4. Operating expenses that includes the expenditure on consumables like electricity, other fuels, chemicals, lubricants etc.

The details of expenditure during 1994-95 are as follows:

Table 2.2. **Components of O&M cost during 1994-95**

Sl. No.	Items	Amount (Rs.)	% to total
1.	Pay and allowances	15,52,592	52.3
2.	Repairs and maintenance	4,60,673	15.5
3	Energy charges	9,55,003	32 2
	Total	29,68,268	100

5.2.4. Water Supply

The scheme envisages an estimated production of water to the tune of 11.21 mld to meet the growing demand of population in the year 2011. The monthly production of water in the year 1994 varies between 220 53 million ltrs in September and 287.78 million

ltrs in April. If we take 250 million litres as the monthly production, the daily output will be around 8.3 mld which makes the annual production 3042 mlpa. However, a sizeable share of this water is supplied to Kodungalloor urban water supply scheme and the actual water produced for Mala will be around 1825 mlpa (60 per cent of the total production).

The water is distributed in the project area through public taps and house connections. As on 31.3.1995 the scheme has provided 1468 public standposts, 1793 private domestic connections, 77 non-domestic connections and 7 industrial connections. The details of the distribution net work is explained in the following table.

Table 2.3 **Details of Public taps, house connections and others**
(as on 31.3.1995)

Name of the panchayat	No. of public taps	No. of Domestic connections	No. of non-domestic connections	No. of Industrial connections
1. Mala	434	510	30	2
2. Puthenchira	237	305	10	-
3. Vellangallore	362	502	15	1
4. Annamanada	66	19	5	-
5. Kuzhur	109	76	6	1
6. Poyya	260	380	11	3
Total	1468	1792	77	7

5.2.5 Demand for water

The population of the Panchayats covered in the Mala scheme according to 1991 census is as follows:

Mala	-	30787
Kuzhur	-	18569
Poyya	-	20474
Puthenchira	-	19804
Annamanada	-	26448
Vellangallore	-	32846
Total		148928

If the population increases at the rate of 1.398 per cent per annum it will touch the level of about 1.90 lakhs in the year 2011. The demand for water, on the basis of the projected population is attempted below:

A. Demand for water for the year 1994-95

a)	Projected population for the year 1994-95	-	155174
b)	Population to be covered for calculating demand for water (90% of the total population)	-	139657
c)	Populattion to be provided water through public taps (60% of (b)	-	83794
d)	Population to be provided with private connections (40% of (b)	-	55863
e)	Demand for water public tap users @40 lpcd	-	1223 mlpa
f)	Demand for water for private connections @ 70 lpcd	-	1427 mlpa
g)	Total demand for water during 1994-95	-	2650 mlpa

B. Projected population and demand for water from 1995 to 2011 (assuming 55 lpcd on the average)

Year	Population	Demand for water (mlpa)
1994	155174	2811
1995	157256	2847
1996	159338	2884
1997	161420	2920
1998	163502	2957
1999	165584	2993
2000	167666	3029
2001	169748	3065
2002	171830	3101
2003	173912	3137
2004	175994	3173
2005	178076	3209
2006	180158	3245
2007	182240	3281
2008	184322	3317
2009	186404	3353
2010	188486	3389
2011	190568	3425

5.2.6 Income from Water

Mala scheme generates income from public taps, household connections and non-domestic connections. In the case of public taps it follows the usually prescribed rate per tap. Private connections are metered and charged according to the actual use. The connections were given from 1993 onwards and the amount due from various users are as follows:

Table 2.4 **Estimate of income to be collected from water users (1994-95)**

Sl. No.	Category of users	Income due to KWA (Rs.)
1.	Public taps (@ Rs.875/tap)	12,84,500
2.	Private domestic connection @ Rs 17/month as minimum charges	3,65,568
3.	Non-domestic consumers @ Rs.58/month as minimum charges	53,592
4.	Industrial consumers @ Rs.115/month as minimum charges	9,660
	Total	17,13,320

As against the above estimate based on minimum charges, KWA have projected an income of about Rs. 3,99,830 for the year 1994-95. This is based on the following break-up.

Table 2.5 **Revenue collection for the year 1994-95**

	Demanded (Rs.)	Collection (Rs.)
Domesstic	2,73,953	2,66,122
Non-domestic	83,920	36,527
Industrial	41,957	34,308
Total	3,99,830	3,36,957

By and large, the panchayats have been reluctant to pay water charges in the Mala scheme. However,according to the data upplied by the sub-division at Mala, one panchayat, Annamanada panchayat has been regular in this regard and remit water charges without substantial arrears. During the year 1994-95 it has remitted Rs.36,166 to KWA in terms of water charges.[4]

[4]The Half Yearly Report(1 October 1994-31 Maarch 1995)hoever, presents an encouraging picture in this regard According to the report,Mala, Vellangallore and Poyya paid part of their dues along ith Annamanad-R88399,Rs100000,RS12000 and Rs98166 respectively. P.13. Half Yearly Report, 1994-95,SEU,Trivandrum.

Mala scheme is facing problems in collecting water charges on the basis of actual consumption as there are no meter readers. The consumers are remitting the minimum water charges at the rate of Rs.17/month for domestic, Rs. 58/month for non-domestic and Rs.115/- for industrial connections. KWA is struggling for the last two years to solve this problem but has not been successful.

5.2.7. Comparison of Income and Cost

The comparison of income and the O&M expenditure of Mala scheme in 1994-95 is as follows:

		Rs.
1.	O&M Cost	29,68,268
2.	Accruable Income	17,13,320
3.	Difference between accruable income and cost	12,54,948 (deficit)
4.	Total income colected by KWA	3,73,123
5.	Difference between income collected and cost	25,95,145 (deficit)

5.2.8 O&M cost per unit volume of water

The current preoduction of water in the Mala scheme is about 1825 mlpa. The O&M cost incurred to maintain this level of prpoduction is about 29, 68,268 rupees excluding depreciation and interest payments. The cost of water per unit volume is thus Rs. 1.63 per 1000 ltres. The accruable income from the production being 17.13 lakhs, this income per unit volume of water is about Rs. 0.59 leaving a deficit of about Rs. 0.43.

If we take into account the wastage of water in transmission, which is about 25 percent of the water produced, the total volume of water distributed under the Mala rural water scheme will be about 1278 mlpa litres during 1994-95. This compared with the O&M cost yields the per unit cost and income estimate as follows:

Table 2.6. **Per Unit Cost and income of water produced and distributed during 1994-95 (Rs/KL)**

	Cost of water (per 1000 litres) (Rs.)	Income from water (per 1000 litres) (Rs.)	Deficit per 1000 litres
Produced	1.63	0.59	1.04
Distributed	2.32	0.78	1.54

5.2.9. Financial Viability of the Scheme

The comparison of income and the OM expenditure during the year 1994-95 is an indication of the financial viability of the project. The operating deficit during the year is Rs.25,95,145. But if we take the income it ought to generate, provided the revenue collection has been efficient, the deficit could have been reduced to almost half ie., Rs. 12,54,948.

As per the project document, the Mala scheme is designed to produce 11.2 mld of water to serve a population of 2 lakhs by the year 2011. The production estimated at this rate then would be 4088 mlpa. If the increase is distributed over a period of 17 years uniformly the annual production increase at the rate of 133 mlpa. The production of water over the years in such a situation can be estimated as follows:

Table 2.7 **Estimate of waterr to be distributed as envisaged in the plan document**

Year	Water to be distributed (MLPA)
1995	1469
1996	1569
1997	1668
1998	1768
1999	1868
2000	1968
2001	2068
2002	2168
2003	2267
2004	2367
2005	2467
2006	2567
2007	2667
2008	2766
2009	2866
2010	2966
2011	3066

The increase in the volume of water available for distribution at this rate can bring revenue to KWA to help them offset the deficit. The two options that can be considered in this cotext are

1. distribute the entire additional production through private connections, both domestic and non-domestic and keeping the number of public taps at the present level.

2. distribute the additional production between private consumers and public tap usuers apportioning 40 percent to private consumers and 60 percent to public tap users.

Under the first option, Mala scheme will be able to generate an income of Rs. 1,70,000 if the entire additional quantity of water is distributed through private

connections. Assuming that the increase in O&M cost will be offsetted by the increase in the tariff rate, the deficit margin will remain by and large stable. The additional revenue generated annually from private subscribers of water will wipe out the deficit in about 7 years time.

The second option, for which there is a committment from KWA to distribute water between private and public usuers in this proportion, will generate less income but will narrow the deficit over the years. The number of public taps it can provide by distrtibuting 60 percent of the additional water will be 16. This will yield an income of Rs.14000. (The calculation is based on the ARWSP norm that a public tap should meet the requirement of 250 persons. If the per capita requirement is 40 lpcd the total quantity of water required for a public tap will be 3.65 mlpa which makes the number of public tap 16). The income it can generrate from the remaining 40 mlpa of water will be 68000 rupees. The total annual addition thus will be about Rs. 82000 which will take about 18 years to cover the deficit.

As in the case of Edappal an attempt has been made to calculate the number of public taps and private connections required for the population. This was attempted in table 2.8 using the same methodology and here again the existting number of public taps far exceeds the number that is optimum or required for the population.

Table 2.8 **Estimate of population and the number of public taps and private connections required.**

Year	Population	Maximum number of public taps	Maximum number of private connections
1994	155174	335	11172
1995	157256	340	11322
1996	159338	344	11472
1997	161420	349	11622
1998	163502	353	11772
1999	165584	358	11922
2000	167666	362	12072
2001	169748	367	12222
2002	171830	371	12372
2003	173912	376	12522
2004	175994	380	12672
2005	178076	385	12822
2006	180158	389	12972
2007	182240	394	13122
2008	184322	398	13272
2009	186404	403	13422
2010	188486	407	13572
2011	190568	412	13722

5.2.10. **O&M Arrangement**

(i) **Organisational arrangement of the scheme**

The Sub Divisional office located at Mala is responsible for the O&M responsibilities of the scheme and is headed by an Assistant Executive Engineer. There are two Assistant Engineers, two clerical staff, one typist, 5 draftsmen, 3 work susperintendents, 9 operators and 9 other supporting staff at lower levels. Several crucial positions with respect to the operation and maintenance like the chemist, electrician etc. are lying vacant.

The present arrangement follows the pattern approved by KWA for schemes of capacity below 25 mld and above 5 mld. An analysis of the functional arrangement of the

sub-division reveals serious inadequacies at the operational level where nearly one-fourth of the position are lying vacant. The following is the present staff position as well as that suggested by the sub division.

Table 2.8 **Current and suggested staff position in Mala**

Level of responsibility/ functions	Present staff position	Staff Position as suggested by the sub division	% of Vacancy
1. Executive level	3	3	--
2. Middle level Administrative staff	3	3	--
3. Operating staff at supervisory level (Work Supdts,overseers etc.)	6	6	--
4. Operating staff at functional level (operators)	23	36	36
5. Operating staff-technical (chemist, electrician)	1	2	50
6. Supporting staff (peon, waterman, drivers etc)	3	3	--
Total	39	53	28

The inadequacy of staff is conspicuous at another level also in the Mala scheme. The administrative section looks after the revenue collection responsibilities. They need to be supported by other staff at field level like the meter readers. The scheme however do not have any meter readers at present and as a result the collection of water charges has been done on a provisional manner collecting only the minimum charges from

consumers. This has resulted in serious financial loss to KWA and inconveniences to consumers because they will be asked to pay the arrears at some point of time in future.

(ii) O&M Responsibilities

The above arrangement is also reflective of the tasks each category of employees have to perform in the operation and management of the scheme. However, our interaction with employees revealed that there is lack of clarity at all levels about their specific responsibilities and the linkage they have in the system. No one has reported that he has been exposed to any mamuels or set of instructions about their specific responsibilities nor even received on-the-job training from their colleagues or from the superiors. One of the casualty of this loose arrangement is the collection of water charges. Though it is accepted at higher levels that KWA has to generate its own income to meet the growing expenditure, it has not been percolated down to divisional or sub-divisional level. As a result, generation of income, be it arrears due from consumers or local bodies or water charges, receives only routine priority. There are, ofcourse, genuine reasons that could be solved only through the initiatives at higher levels. However, the lack of clarity about their own roles do not allow innovations at sub-divisional level to take corrective steps in this regard. Another important function that is neglected, in spite of the persistent pressure from public is the fault repairing services. The present mood of KWA is one of apathy and helplessness due to various reasons. But, there has never been a serious attempt at the operational level, or even at the higher level to bring about long term improvement.

5.3. Rural Water Supply Scheme - Choondal

5.3.1. Background

The Choondal Rural Water Supply Scheme was one of the small rural water schemes of KWA in Thrissur district with the financial assistance of LIC. The scheme depends on ground water laying a pumping main from tube well at Cheranelloor and constructing a pump house. The scheme was partially commissioned in 1987 and was expected to meet the requirement of mainly the people in Choondal Panchayat. The scheme became fully operational in 1991.

The bore well has the capacity to discharge about 4.491 mld water at the rate of 1,87,200 litres per hour. The pumping hours at present is restricted to 12 to 18 hours and the maximum quantity of water pumped a day is about 7.02 lakhs litres a day.

Choondal scheme also distributes water through public taps and private taps used for domestic and non-domestic purposes. The number of domestic connections till 1995 are 37 and non-domestic connection about 8. The number of public taps are about 138.

5.3.2. Cost of Construction

The construction cost of the scheme according to the initial plan was about 14.01 lakhs. This includes construction cost of the pumping main, sump and pumphouse and the distribution system including the construction of the OH tank of 3.5 lakh litres. During the second phase, the scheme was expanded laying pumping main from Parannur to GL tank and the construction of a pumphouse for which about Rs.9.25 lakhs were incurred. The scheme was then extended to the adjacent panchayat in the year 1992 for which an additional amount of Rs.7.45 lakhs were spent The details are as follows:

he number of water connections given under this scheme and the income
l during 1994-95 are as follows:

3.4. Estimate of income to be collected as water charges during 1994-95

Sl. No.	Type of Water Connection	No.	Income (Rs.)
1	Domestic	17	7,548
2	Non domestic	8	81,399
3	Public taps	138	1,20,750
	Total		2,09,697

Choondal also the actual income realised as water charges is restricted to
om domestic and non-domestic connections.Panchayat has not paid their water
is pending as arrears. In the case of domestic connections water charges are
at the rate of Rs.17/- per month and not on the basis of actual consumption.

omparison of Income and Cost

ıe O&M cost as reported by the KWA for the year 1994-95 is Rs.1,82,411
hich they have realised an income of 88,947. KWA is also to receive an amount
0,750 from the panchayat. The details are as follows:

	Rs.
O&M Cost	1,82,411
Total accruable income	2,09,697
Surplus during the year 1994-95 (2-1)	27,286
Total revenue collected as water charges during 1994-95	88,947
Difference between cost and actual revenue collection (4-1)	(-)93464

5.3.6. O&M Cost per unit volume of water

The unit cost of water for the Choondal scheme is estimated about Rs.0.92 per 1000 litres. The accruable income being Rs.2,09,697, the corresponding income it can generate per 1000 litres will be Rs. 1.1. In other words, the scheme generate a surplus of Rs.0.18 for every 1000 litres of water it produces. This is explained in table 3.5

Table 3.5 **Per unit cost and income of water produced and distributed (in rupees)**

	Cost of water per 1000 ltrs	Income per 1000 ltrs	Surplus/Deficit per 1000 ltrs
Produced	0.92	1.1	(+) 0.18
Distributed	1.23	1 4	(+) 0.17

5.3.7. Financial Viability of the Scheme

Choondal scheme presents an optimistic picture in terms of the surplus it generate. This however, has to be considered in the context of the advantages it enjoys over other rural water supply schemes of KWA

In the first place, the nature of the water supply scheme and the source of water helps KWA to exclude the cost required for treatment This being a major component in the cost it helps KWA to bring down the cost at this level.

Secondly, the Choondal scheme is only a small scheme managed by the Guruvayoor sub-division. The cost mentioned here therefore excludes another major component, the pay and allowances of staff at sub-divisional office. In fact the operational tasks of Choondal scheme are executed by two operators who were taken as casual workers.

Thirdly, regarding income, the earning would have been more had KWA monitored and took meter readings of water used by consumers and charged them accordingly. Panchayats were never approached seriously and were never persuaded to pay the required water charges on street taps.

5.3.8. O&M Arrangement

Choondal as a small scheme does not have any separate administrative arrangement at the sub-divisional level. The scheme is at present operated by two technical staff as operators who are taken on temporary basis.

5.4. Comparison of schemes in terms Cost and Income

A comparison of the three schemes of Edappal, Mala and Choondal in terms of O & M cost, income, per unit cost and income are attempted in the following table.

Table 5.4. **Comparison of Cost and Income of Edappal, Mala and Choondal (1994-95)**

(Rs.)

Sl. No.	Items	Schemes		
		Edappal	Mala	Choondal
1.	O & M Cost	38,36,420	29,68,268	1,82,411
2.	Accruable income from water charges	6,46,625	17,13,320	2,09,697
3.	Difference between accruable income and cost (2-1)	(-) 31,89,795	(-) 12,54,948	(+) 27286
4.	Income realised/ actual collection	-	3,73,123	88947
5.	Difference between actual collection and O & M cost (4-1)	(-) 38,36,420	(-) 25,95,145	(-) 93,464
6.	O & M cost per unit volume of water produced (ie. per 1000 litres)	2.9	1.63	0.92
7.	O & M cost per unit volume of water distributed (per 1000 litres)	3 8	2.32	1.23
8.	Accruable income per unit volumes (1000 litres) of water produced	0.49	0.59	1.1
9.	Accruable income per unit (1000 litres) of water distributed	0.64	0.78	1.4
10.	Surplus/Deficit of per unit volume (1000 litres) of water produced	(-)2.41	(-)1.04	0.18
11.	Surplus/Deficit of per unit volume (1000 litres) of water distributed	(-)3.16	(-)1.54	0.17

The financial comparisons attempted above throws up number of points that requires attention. These are:

1. The current expenditure on operation and maintenance in the schemes are considerably high in comparison to the income it generates. (Choondal Scheme perhaps is an exception because of its nature and size.) This aspect needs to be carefully looked into as it is the most important aspect to make the scheme financially viable.

2. Regarding income, none of the schemes were able to collect the water charges due to them. In Edappal no income has been collected so far while in mala 20 percent and in Choodal 42 percent of the accruable income has been collected. The revenue collection arrangements are also inadequate and ineffective. The collection of water charges from panchayats poses several problems to KWA in the present set-up and a solution to this requires changes in approach (such as involving panchayats also in the operation and management of schemes) or administrative and legal support from Government. At the higher level KWA has now been successful in getting a portion of this arrears from Government Grants which otherwise would have been distributed among panchayats.

   Individual/scheme specific initiatives are not generally encouraged to solve this problem. This too needs to be changed along with streamlining of the revenue collection arrangements.

3. The per unit cost of water produced and distributed is a function of both the cost and quantity of water produced If this has to be brought down to a feasible level concerted efforts are required to reduce the cost and augment the production. Therefore, along with the efforts to bring down the cost, appropriate measures may also be considered to increase the volume of water produced and distributed.

4. It is, of course, erroneous to compare the schemes on the basis of performance in one single year (ie.1994-95). This is especially so in the case of Edappal for which 1994-95 was an year of unexpected breakdowns and low production. Edappal is also yet to start private connections which will have implications on income and production of water. However, the unit cost and income are indicative of the financial problems of the schemes which requires attention at this stage itself.

5. The options open to KWA with regard to the schemes of Edappal and Mala to bring down the deficit are limited. It is evident from our analysis that the schemes have to distribute the entire additional production of water to private consumers to bridge the deficit in a reasonable span of time. KWA can fully adhere to this option as it has already provided more public taps than what is required.

CHAPTER VI

SEU AND THE STRUCTURES CREATED FOR RURAL WATER SUPPLY SCHEMES OF EDAPPAL AND MALA

6.1. SEU approach

The basic approach of SEU is to facilitate community participation in the water supply and sanitation programmes through creation of certain structures consisting of people's representatives and local bodies.

The Socio-Economic Units, Kerala was established in 1988 with the following objectives:

a) To ensure community participation in the planning process of Water Supply Schemes.

b) To select the locations of public stand posts with community participation, taking into consideration the socio-economic criterion.

c) To form Water Committees in each Ward, so as to ensure community participation.

d) To furnish potable water and sanitation latrines to more people, particularly those belonging to the weaker sections and below poverty line.

e) To facilitate rural communities for proper water management, better health practices and methods through health education.

f) To organize appropriate structure in the project area so as to enable at least 90% of the people to avail potable water, to attend to maintenance work promptly and at the same time to ensure returns for the costs on such activities.

There are 3 units of SEU functioning at Kozhikode, Trichur and Quilon. It also has a coordinating office located at Thiruvananthapuram.

6.2. SEU Structures

In order to achieve the objectives explained above, the SEU has created a three tier structure viz., Stand Post Attendants (SPAs), Ward Water Committees (WWCs) and the Panchayat Water Committees (PWCs).

6.2.1. Stand Post Attendants (SPAs)

A lady volunteer from the community, who is also an user residing near the stand post is selected by the WWC as SPA. This is to ensure community involvement at the grass roots level. The SPA has the following responsibilities:

1. To keep the surroundings of stand post clean and to see that the water is not wasted.
2. To ensure that the beneficiaries do not misuse the water from stand post.
3. To report any fault or misuse of water to the Ward Water Committee.

The SPAs are expected to work closely with other suers of the stand post and the WWC. The latter is expected to help them in their smooth functioning.

6.2.2. Ward Water Committee (WWC)

The Committee consists of 7 members including two women and an ex-officio member from the SEU. The selection of members is based on certain criteria laid down for the purpose. The committee has the following duties and responsibilities:

1. To assist the Committees in selecting appropriate location for laying public stand posts.

2. To help in procuring private land, if necessary.

3. To assist in laying the pipes and to solve problems which may arise.

4. To mobilize voluntary labour in the construction and maintenance.

5. To ensure that the stand posts are kept clean and to conscientise people on this.

6. To take appropriate measures to prevent misuse of water, when such incidence are reported by SPA.

7. To assist the health workers and the SEU volunteers in organizing beneficiary oriented health education campaign/camps.

8. To inform the PWC when assistance is required from some agency, in health problems related to water.

9. To take action in consultation with the KWA officials, when there is minor faults in the pipe or pipe line in the ward.

10. To report any serious faults to the concerned officials (KWA/Panchayat).

11. To record the complaints of beneficiaries from the Ward and to take appropriate action.

12. To provide assistance to the public and officials on matters relating to water supply.

13 To provide the rural community with knowledge on the rural water supply scheme and to provide them health education and build awareness on hygiene.

6.2.3. Panchayat Water Committee(PWC)

The Committee consists of panchayat ward members, a representative selected from WWC, an official representative nominated by KWC, an Assistant Engineer from the Kerala State Electricity Board, Health inspector, Panchayat Executive Officer, NSS, ICDS Supervisor/Officer and representative from SEU

The PWC has the folloing responsibilities:

i) to supervise the implementation of the ater supply shemes in their respective Panchayat.

ii) to support KWA in their efforts to solve the drinking ater problems of the Panchayat.

iii) to provide help and support to WWCs in their efforts.

6.3. SEU structures - patterns of interaction

The above structures are expected to function as an integrated system to ensure community participation and improve the functioning of the schemes. Their functions are also defined accordingly. The SPAs at one end of this system contribute to the efficient use of water and maintenance and upkeep of public taps. They are directly linked with the Ward Water Committees and provides information on faults/misuse of water. WWC responds to these feedbacks and take appropriate steps to solve these problems. They interact with Panchayat/PWC and KWA and play a coordinating role between the users of public taps/SPAs and other agencies. PWCs, at the next level, is expected to assist the WWCs in solving problems related to water supply It is also assigned the overall responsibility in the management schemes. It works closely with KWA in matters related with drinking water

The interlinkage between the structures is shown below:

Panchayat Water Committee
[Panchayat level officials of various Departments, Representatives of Ward Water Committee, Representatives of SEU]

↑

Ward Water Committee

[Panchayat member of the ward, Mohila Samajam member, Social workers, Youth representative, Social Welfare, Health representative at Ward level]

↑

Stand Post Attendants

6.4. SEU structures : Functioning and Problems

The various structures created by SEU such as SPAs, WWC and PWCs were intended to work closely with other institutions. This is essential for these structures by themselves are not in a position to undertake the management and the O&M responsibilities. Their role, on the other hand, is mainly supportive in nature in ensuring community participation and sustainability of schemes.

The KWA is the agency responsible for the implementation and also the operations and maintenance of the rural water supply schemes. They have been fulfilling these functions on their own without giving adequate emphasis on peoples involvement. In the

case of the two schemes - Mala & Edappal that are covered in the study a significant departure has been made from this approach. The KWA here is expected to work closely with people involving them both in the planning and in the implementation aspects of the schemes. The linkages between the SEU structures and KWA therefore are crucial.

The Panchayat has the overall responsibility of providing drinking water to its people. The linkage with SEU structures are therefore relevant because they provide the necessary feedbacks on problems related to water supply which in turn help Panchayats to take it up with KWA.

The study examined the functioning of these structures with a view to identify the problems and suggest measures for improvement The analysis is based on primary data collected from a sample in Mala and Edappal (details of methodology are explained elsewhere).

6.4.1. SPAs : functioning, problems and suggestions

A total of 33 SPAs (17 from Mala and 16 from Edappal) were interviewed with the help of a schedule to elicit information on the functions, training received, problems faced, interaction with water committees and their opinion about the willingness of consumers to pay for the water.

6.4.1.a Tasks performed

SPAs have been assigned three specific responsibilities - upkeep of the stand post, preventing misuse of water and fault reporting. In both the schemes all SPAs are aware of these responsibilities They were also performing these task. The following table indicate the scheme wise distribution of SPAs according to the tasks performed.

Table 6.1 **Tasks performed by SPAs**

Sl. No.	Tasks performed	Mala		Edappal	
		No. of SPAs	% to total	No. of SPAs	% to total
1	Keeping the stand posts and its sorroundings clean	17	100	16	100
2	Preventing misuse/wastage of water	17	100	16	100
3	Fault reporting	16	94	16	100
4	Attending eetings on water & sanitation	17	100	10	63

SPAs in general have been oriented about their role through education programmes imparted by SEU. Such programmes motivated SPAs adequately to take their tasks seriously. They are also aware of the cost involved in providing drinking water to them and hence the need for avoiding wastage and misuse of water.

6.4.1.b SPA and WWC

SPAs are expected to work closely with WWC. They inform about faults, mainly leakage of taps and pipelines to WWC which in turn communicate this to Panchayat or KWA. SPAs are also expected to receive support from WWCs when there is any problems relating to use and upkeep of stand post or water supply in general. The field study reveals that SPAs receive reasonable support from WWC on such matters. However, there are differences between Mala and Edappal. The situation is explained in the following table.

Table 6.2 **Support from WWC**

Sl. No.	Type of support	Mala		Edappal	
		No. of SSPs	% to total	No. of SPAs	% to total
1	Following up of fault reporting	17	100	2	
2	No specific support	-	-	14	

As revealed in the table there is variation between Mala and Edappal. This is due to the fact that the water supply in most of the Panchayats in Edappal is irregular and in certain wards it is reported that water is not available at all. This in turn affected the effectiveness of WWCs in Edappal considerably rendering them more or less defunct.

6.4.1.c SPA and SEU

SEU through its field organisers maintains regular contact with SPAs. In both the schemes SPAs recognise the support provided by SEU in terms of

- facilitating piped water supply to them
- locating stand post at appropriate places and
- facilitating the services of KWA in fault repairing.

While in Mala SPAs are satisfied with the support extended to them by the SEU the position is not the same in Edappal. The reasons can again be traced to the fact that despite the efforts of SEU water supply has been erratic and irregular here. The position is indicated in the following table.

Table 6.3 **Support received from SEU**

Sl. No.	Type of support	Mala		Edappal	
		No. of SPAs	% to total	No. of SPAs	% to total
1	Facilitating piped water supply	14	82	8	50
2	Locating stand post appropriately	8	47	10	63
3	Facilitating repair services	13	76	--	--
4	Cannot specify	3	18	6	38

6.4.1.d SPA and KWA

SPAs do not have any direct linkage with KWA. However, some of them, especially in Edappal, report faults/leakages directly to KWA. The responses received from SPAs in this connection indicate that KWA does not offer prompt or adequate service in such cases. In general SPAs in Edappal are of the view that KWA does not provide much support. They are also unable to explain the type of support they expect from KWA. On the other hand in Mala, KWA has a better image among SPAs because of the some what adequate water supply and reasonably prompt fault repairing. Here again they are not in a position to explain the nature of support they expect from KWA.

6.4.1.e SPAs and other stand post users

The Number of households using a stand post vary from 7 to 29 in our sample. The distribution of households according to the use of stand post is given below.

Table 6.4 **Distribution of households according to use of stand posts**

Sl. No.	Category	No. of households	
		Mala	Edappal
1	< 10 user households/tap	--	6
2	11-15 households/tap	3	3
3	16-20 households/tap	7	3
4	21-25 households/tap	5	2
5	26-30 households/tap	2	2
	Total	17	16

The SPAs reported that during the initial period the other users of the stand post were not cooperative enough and they were facing problems in keeping the stand post and its surrounding clean and preventing misuse and wastage. The situation has now changed mainly due to the efforts of SEU and WWCs. The types of support and help they receive from the users of stand post are explained in table.

Table 6.5 **Type of help and support from stand post users**

Type of Support	No of respondents			
	Mala	% to total	Edappal	% to total
1. Help to keep stand post platform and surroundings clean	10	59	2	13
2 Help to report fauls	6	35	-	-
3. Help to prevent misuse	6	35	-	-

The difference in terms of consumers' involvement of the two schemes is largely due to the inadequate water supply in most of the stand posts in Edappal

SPAs also face complaints from other users as the latter consider that SPAs are responsible for the stand post and water supply. These complaints can be broadly as follows:

i) Irregular water supply
ii) Inadequate water supply when it is most needed (timing of water supply)
iii) Muddy water
iv) Delay in faults repairing
v) No water supply.

Eight SPAs in Mala and 5 SPA in Edappal, however, mentioned that the other standpost users had brought no complaints to their notice. Despite the problems mentioned above standpost users and SPA by and large have smooth interactions and cooperate with each other on issues related with drinking water and sanitation.

6.4.1.f Problems faced by SPAs

SPAs were asked about the problems they face in performing their tasks. These problems are shown in table

Table 6.6 **Problems faced by SPAs**

Problems	No. of households & their percentage to total			
	Mala		Edappal	
	No.	% to total	No.	% to total
1. Lack of cooperation from other users to keep the platform/sorroundingss clean and prevent misuse	3	18	2	13
2. Lack of prompt service from KWA hen fault is reported	11	65	3	19
3. Irregular water supply				
4. Inadequate water supply wwhen it is most needed by users	3	18	8	50
5. No problems	4	24	--	--
	6	35	5	31

The factors that cause the above problems are mainly of two types:

1. Related to community/stand post users

Problems such as lack of cooperation from other stand post users in the upkeep and cleanliness of standpost and its surroundings and misuse of water belong to this category. However these problems are not that prominent for only 18 and 13 percent of the SPAs in Mala and Edappal respectively reported these problems.

The problems need to be tackled at two levels.

(i) by providing appropriate orientation to public tap users on the need for cleanliness and hygiene with respect to the standpost and its surroundings, the value of water as it involves cost and the need for preventing misuse and wastage. This has to be done on a regular basis to sustain the impact.

(ii) by providing adequate support in terms regular water supply and prompt fault repairing. In the absence of this the orientation of stand post users suggested above may not be meaningful and effective.

2. Related to KWA

Problems such as irregular water supply, delay in fault repairing and adquate supply of water when it is most needed come under this category.

There are two aspects to the above set of problems that requires action.

(i) Technical problems that constrains KWA in providing water adequately. This may be on account of design, maintenance or poor quality of spare parts which need to be tackled at KWA level by taking appropriate corrective actions.

(ii) Managerial problems related to manpower systems and procedures, attitudes and organisational environment. These problems require carefully planned strategies such as manpower planning with focus of training and the development of appropriate systems and procedures.

The problems identified in the context of the functioning of SPAs cannot viewed in isolation as they are closely linked with several aspects which will be discussed in the subsequent sections.

6.4.2. Ward Water Committees: functioning, problems and suggestions

Ward Water Committees (WWC) are envisaged to play a major role in locating the standpost at appropriate places, taking steps to ensure water supply by reporting faults to KWA and assisting communities and KWA in matters relating to water supply.

The study covered a total of 33 members of WWCs (20 from Mala and 13 from Edappal). Data relating to their role, problems faced, system of fault reporting, linkages with Panchayats and KWA and their opinion about the willingness on the part of public tap users to pay for the water are elicited with the help of an interview schedule (Annexure).

The Panchayat wise distribution of WWCs in our sample in the two schemes is given below:

Table 6.7 **Panchayat wise distribution WWCs in the sample**

Mala		Edappal	
Panchayat	No. of WWCs'	Panchayat	No. of WWCs
Mala	4	Alancode	4
Vellangallor	4	Edappal	2
Poyya	2	Thavanoor	2
Kuzhur	3	Nannamukku	3
Annamanada	4	Vattankulam	2
Puthenchira	3		
Total	20		13

6.4.2.a Tasks performed

WWCs in our sample performed the following tasks

1. **Helping KWA in the selection of appropriate locations for public taps**: WWCs, without exception, were involved in preparing ward maps and on the basis of certain criteria they helped KWA to locate public taps at places that ensure utilisation for maximum number of households. WWCs thus had a major role in the planning phase of the scheme.

2. **Facilitating KWA in fault repair**: WWCs perform a crucial role in the present system of fault reporting. They are placed between SPA and Panchayat and reports faults received from SPA to the Panchayat or KWA.

3. **Functioning as the core group to assess water related problems in the ward**: WWCs realise this role through regular meetings and discuss issues related with water and sanitation.

The functions performed by WWCs in Mala and Edappal are shown below:

Table 6.8. **Tasks performed by WWCs**

Sl. No.	Tasks	Mala		Edappal	
		No.	% to total	No.	% to total
1.	Decide the location of stand posts	16	80	9	69
2.	Fault reporting	20	100	5	38
3.	Hold meetings to discuss water and sanitation problems	20	100	2	15

The table shows marked difference in the performance of WWCs between the two schemes. In Edappal because of the problems relating to water supply WWCs are not in

a position to function as effectively as in Mala. This explains the variation in the performance of tasks in two schemes.

6.4.2.b WWC and Panchayat

WWC and Panchayat maintain a close relationship on account of the fact that the convenor of the WWC is the ward member of the Panchayat. When faults are reported to the Panchayat by the WWC the former communicate the same to KWA for corrective action. Besides, Panchayat discuss the water related problems when such issues are raised by the convenor of water committee who is also a member of the Panchayat.

However, there is lack of clarity regarding the role and type of linkage the Panchayat should have with the WWCs. As a result, the WWC members in our sample were not clear about the type of support they can expect from the Panchayat for the effective performance of their role.

6.4.2.c WWCs and KWA

In the initial phase, the WWCs had channels of contact with KWA in the laying of standpost at appropriate places They were then working as a team where SEU was playing the coordinating role. When this phase was over, the scope for close interaction between the WWC and KWA became limited. In the present set-up WWCs in general do not have any direct linkage with KWA. However, there are instances when the WWC directly deal with KWA in fault reporting. This is more in the case of Edappal scheme whereas in Mala WWCs in general report faults to the Panchayats which in turn communicate it to the KWA

The reasons for the limited interaction between WWC and KWA are:

1. Lack of clarity on the part of WWC about the need for working closely with KWA. WWCs, by and large, perceive the linkage as something confined to fault reporting and

2. reluctance on the part of KWA officials to acknowledge and accept the role of WWC in the functioning of the scheme.

In our sample the only support that is reported to have received by WWCs is fault repairing.

In Mala, 18 out of 20 WWCs reported that KWA support them in terms of fault repairing, whereas in Edappal the number is 8 out of 13. Delays on the part of KWA in providing the service was another aspect mentioned by the WWC (16 out 18 in Mala and 7 out of 8 in Edappal.

6.4.2.d Problems faced by WWCs

The study probed about the problems faced by WWCs in fulfilling their tasks. Table indicates this.

Table 6.9 **Type of problems faced by WWCs**

Sl. No.	Type of problems	Mala		Edappal	
		No.	% to total	No.	% to total
1	Irregular water supply and the resultant lack of acceptability	3	15	7	54
2	Delay in fault repairing	16	80	7	54
3	Lack of cooperation on the part of public tap users (misuse of water)	2	10	4	31

The problems faced by WWCs are more prominent in Edappal compared to Mala. This is mainly due to thefactors related to the water situation. Some of the reasons that are responsible for causing these problems are:

1. Irregular water supply: This has constrained the effective functioning of WWCs. In Edappal, for example, many of the water committees are dormant and invite public criticism wherever issues related water supply are discussed. The responsibility of taking corrective measures in this regard rest with the KWA. They have to identify the reasons which may be technical, design related or man power related. This calls for detailed probing into these aspects.

2. Inadequate man power at appropriate levels: Our discussions with KWA officials revealed that in both schemes the number of staff responsible for O&M, like the operators, are inadequate which leads to problems in water supply.

3. Inefficient fault repairing system: The present arrangement of getting the faults repaired through contractors have several loopholes. Some of these drawbacks in the present system are

(a) Lack of interest on the part of contractors to take up minor repairs as these are not profitable to them.

(b) Lack of control on the part of KWA over the contractors in getting the work done as required.

(c) KWA does not have any efficient system of checking/ inspecting/monitoring the work done by contractors.

(d) Lack of an effective system of ensuring the quality of materials used by contractors.

4. Apathetic attitude of KWA officials: Our interaction with KWA officials indicate that they are not accountable to the public for providing prompt service. They are also not inclined to accept the existing arrangement of different committees in fault reporting. Instead, they point out certain genuine reasons such as the lack of adequate manpower, difficult procedures etc. for the delay in getting faults repaired.

The suggestions regarding the steps to be taken to solve these problems are discussed separately.

6.4.3 Panchayat Water Committees (PWCs) - functioning, problems and suggestions

Panchayat Water Committees are the apex level structure responsible for supervising the functioning of water supply schemes, helping KWA to solve problems related to water supply in the Panchayat, providing support and guidance to WWCs in their functioning and facilitating the collection of water charges due to KWA. Though PWCs are envisaged to play a crucial role in the management of water supply schemes they are not functioning effectively in both schemes. The committees have never been convened regularly in both schemes of Mala and Edappal They are almost defunct at present.

In our study, we tried to elicit the reasons for non-functioning of PWCs from the Panchayat presidents/ members. In Mala out of the six Panchayats 5 were covered for this purpose whereas in Edappal all the five Panchayats have been included.

The reasons pointed out by the Panchayat presidents/members for the non functioning of PWCs are:

1 Panchayat presidents/members are really not convinced about the need of such a

committee since the WWCs and Panchayat are capable of tackling the problems related to water supply independently.

ii. The committee includes officials from few departments such as KWA, KSEB, etc. It was pointed out that there is difficulty in ensuring participation of these official members in the meeting as they are not bound to attend such meetings.

iii. Panchayat presidents are often busy with several issues and hence seldom get time to convene such meetings.

iv. The SEUs in both schemes, it seems, have not given adequate attention to PWCs in facilitating their supervisory role.

CHAPTER VII

PANCHAYAT AND RURAL WATER SUPPLY SCHEMES

7.1. Panchayat and its Involvement in water supply schemes

Panchayats in the present set-up are involved in the water supply schemes in the following way:

To support WWCs in the selection of location for public taps.

To facilitate the maintenance of public tap/pipes through reporting the faults to KWA.

To pay the water charges for public stand post to KWA.

To ensure regular water supply to the community coordinating with KWA.

In fulfilling the above functions the Panchayat in our sample reported certain problems which are listed in table 7.1.

Table 7.1. **Problems faced by Panchayat**

Sl. No.	Type of problems	Mala		Edappal	
		No.	% to total	No.	% to total
1	Lack of adequate support from KWA	5	100	5	100
2	Inability to pay water charges	3	60	5	100
3	Inability to ensure regular water supply	2	40	5	100

7.2 Panchayat and KWA

Many of the problems mentioned above are linked with KWA and its functioning. KWA being the sole agency for water supply Panchayats are not in a position to involve itself directly to improve the situation. However, the Panchayat can influence KWA to function more effectively through their political clout and by providing information on faults, availability of water and other problems related with water supply. The linkages between KWA and Panchayats are crucial in the context of water supply schemes.

The study covered five out of the six Panchayats in Mala and all the five Panchayats in Edappal. Presidents or members of these Panchayats were interviewed with the help of schedule (Annexure) to collect information on the various issues of water supply schemes implemented in both these places.

7.2.1. Drinking water situation in Panchayat

In Edappal all Panchayats have reported that they have problems regarding the supply of drinking water through public taps. It was also reported that in certain wards no water was available at all while in other places supply was irregular. The problem is acute during summer and people have agitated over this issue against Panchayat and KWA.

In Mala the situation is somewhat better Only 2 Panchayats have reported this as a serious problem. In all other areas water supply was rather regular but some of them expressed the view that the supply was not adequate or available when people needed it most. Here also water supply in summer is highly inadequate.

Prior to the introduction of the schemes the present standpost users were largely dependent on private/ public wells or the then existing water supply schemes. For

example, in Edappal there were already few public taps installed by KWA which were closed when DANIDA scheme was introduced. With the introduction of these schemes in Mala and Edappal those belonging to the lower income strata are mainly dependent on the public standpost.

The Panchayats in both Mala and Edappal are concerned about the problems related with water supply. In Mala, Panchayats were able to take up these issues with KWA more effectively than in Edappal. This was because of the patronage enjoyed by the present Panchayat leadership which was lacking in Edappal.

7.2.2. Linkages with KWA

In the present set-up Panchayats do not have any formal linkage with KWA. The only channel envisaged is the PWCs which are defunct in both places. However, Panchayats were maintaining contact with the KWA through the fault reporting system. Besides Panchayat presidents or members were having informal interaction with KWA officials and getting the problems solved as and when these arises. This informal arrangement is reported to be effective which in turn has been one of the reasons for the non-functioning of the PWCs.

The presidents and members of the Panchayats in our sample are convinced of the need for strengthening the linkage between Panchayats and KWA. They are also of the view that this is all the more significant in the context of the Panchayati Raj system which is to be introduced shortly. The following suggestions were offered by them in this context.

1. The PWCs need to be activated and the SEU should take up the responsibility of convening the meeting at regular intervals

2. Panchayats may be permitted to take up simple repairs and maintenance in their respective areas.

3. A KWA official may be included in the WWCs so as to ensure the prompt service. This opinion is not shared by all members in the sample, some of them were of the view that this may be difficult to implement (2 out of 5 in Mala and one out 5 in Edappal).

The role of Panchayats and its relationship with KWA will be different when the Panchayati Raj institutions come in practice. The implications of the new situation and nature of partnership between KWA and Panchayats will be discussed separately.

CHAPTER VIII

WILLINGNESS AND ABILITY OF PUBLIC TAP USERS TO PAY FOR WATER

This section discusses the willingness and ability of consumers to pay for water on the basis of our field study This is discussed in the context of the problems faced by Panchayat in paying the water charges levied by KWA.

8.1 Present arrangement

In all water supply schemes of this study water is supplied free of cost to the users to public taps. This was done on the assumption that the users of public taps belong to the most disadvantaged sections of society who are incapable of paying the cost. In the present arrangement the cost is borne by the panchayats at a standard rate of Rs 875/year per standpost. KWA is expected to collect this amount from panchayats as any other agency providing services of this nature.

However, almost all the panchayats in the three water supply schemes of Mala, Edappal and Choondal have not paid their water chargees regularly to KWA. The only exemption was the Annamanada Panchayat in the Mala Scheme which remitted their dues regularly till this year.

Panchayats have the following reasons for not paying the water bills.

1. Lack of fund: The income generated by most of the Panchayats are reported to be insufficient even to meet their essential requirements. The grant they receive from Government is also inadequate and is increasingly getting reduced, forcing Panchayats to depend more on its resources.

2 High water charges Without exception, all the Panchayats feel that the standard

rate of Rs.875/- per standpost is high and unaffordable.

3. Inadequate, irregular and poor quality water supply. Their views about high water charge have to be considered against the service they receive. The water taps are often dry or water comes in the taps when they are least required or the water is turbid, saline or with high chlorine content

4. Poor repairs and maintenance: Irregular and inadequate water supply is also due to the poor repairs and maintenance. KWA is also not in a position to provide fault repairing service in a satisfactory manner

KWA too has genuine problems for not providing adequate or complaint-free services to the customers such as (1) lack of fund to undertake repairs. (2) lack of adequate staff to undertake the work. (3) the present system and procedures that causes delay, and (4) poor voltage of electricity etc

Cost sharing by consumers of public taps becomes relevant in the context of the above problems expressed by the Panchayats and KWA

Cost sharing is important for it facilitate people's involvement in the schemes which in turn will contribute to the sustainability It also ensures accountability on the part of the agency that provides water which will compel the same to provide satisfactory service.

In the case of the three schemes in our study, cost sharing is suggested for the following reasons.

1. It reduces the burden of panchayats which are struggling for resources

2. It infuses a sense of involvement on the part of users which can avoid misuse of water

3. Payment for water will enable the users to demand for better services from KWA. KWA will also be more responsive in this regard.

4. Payment for public taps from the users can also ward off unreasonable demands for public taps.

However, collection of water charges from users of public tap has to take into account certain parameters that are historical, economic and attitudinal. Historically, water has been supplied free of charge to people, especially to the poor people. To make a departure from this practice may not be palatable to the public. Moreover, the users of public tap may not be in a position to pay for water because of their poor economic status. These two sets of factors have created an attitude among users of public tap to resist any attempt that make them pay.

We have examined the willingness and ability of consumers to pay the water charges in Mala and Edappal. The analysis is based on the data collected from the SPAs who are the users of public tap and from members of WWCs who are constantly in touch with public tap users

8.2. Willingness to pay - responses from SPAs

The field study covered 33 SPAs (17 from Mala and 16 from Edappal). Regarding the capacity of consumers to pay for the water, all SPAs were of the view that the public tap users belong to low income group and hence may find it difficult to pay the water charges. When probed further it became clear that they may be able to meet the cost provided the amount is nominal in nature. The response of the sample is given in table.

Table 8.1 **Willingness to pay**

Sl No.	Opinion about willingness to pay	Mala		Edappal	
		No. of SPAs	% to total	No. of SPAs	% to total
1.	Willing to pay if the amount is nominal	11	65	11	69
2.	Not willing to pay	6	35	4	25
3.	Cannot say	-	-	2	13

The willingness of consumers to pay, however, is subject to certain conditions. These are indicated in table.

Table 8.2. **Conditions for payment as indicated by SPAs**

Sl. No.	Conditions	Mala		Edappal	
		No. of SPAs	% to total	No. of SPAs	% to total
1	Regular water supply	9	53	11	69
2	Prompt repairs	10	59	7	44
3	Good quality	4	24	2	13
4	Affordable water charge	11	65	11	69

The opinions on the monthly amount they can pay also vary among SPAs. While 39 percent (13 out of 33) of them opined that users may be willing to pay a maximum of Rs.5 per month. The rest (20 out of 33) indicated that they can pay upto Rs.10 per month.

8.3. Collection of water charges from public tap users : responses from WWC

A sample of 20 members of WWCs from Mala and 13 members of WWCs from Edappal were interviewed to elicit their opinion. Their views about the capacity of consumers to pay are more or less similar to that of the SPAs.

A sizeable percentage of the WWC members consider that public tap users can afford the payment of water charges if it is nominal. Their response in this regard is explained in table.

Table 8.3. **Opinion of WWC members whether public tap users be charged or not**

Opinion	Mala		Edappal	
	No. of WWC members	% to total	No. of WWC members	% to total
1. Yes, they may be charged nominally	12	71	9	56
2. No, they may be charged	5	29	4	25

Here again, the WWC members have expressed certain requirements as preconditions for implementing water charges.

1. Affordability - The WWC members who supported the collection of water charges from consumers were unanimous that the amount demanded be affordable. Nearly 50 percent of them expressed the opinion that the rate should not exceed Rs.5 per person/month while the rest reported that this amount could be upto Rs.10/-.

2. Satisfactory service - WWCs members were unanimous again that KWA should ensure regular water supply and prompt repairing before the consumers are asked to pay.

8.4. Collection of water charges: responses from Panchayat Presidents/Members

The panchayat presidents/members in our sample were also asked about their opinion about the collection of water charges from standpost users. These are given in Table:

Table 8.4. **Opinion of panchayat presidents/members about collection of water charges**

Opinion		Mala		Edappal	
		No. of Panchayat President/ Members	% to total	No. of Panchayat Presidents/ Members	% to total
1.	Cannot be collected	3	60	4	80
2.	Can be collected	2	40	1	20

The arguments put forward by the category who is against collection of water charges are:

(a) low economic status of public tap users,
(b) negative public response,
(c) Water being a basic need panchayat should own the responsibility to provide it.

Those who are for collecting water charges argue mainly on the basis of the financial constraints of panchayats

8.5. Cost sharing: issues in implementation

The above discussion based on the responses of SPAs, WWC members and panchayat presidents/members as well as the impressions formed during our informal interaction with the standpost users lead us to conclude that cost sharing is feasible

A significant percentage of SPAs and public tap users in both Mala and Edappal reported that they are prepared to pay an affordable amount under certain conditions viz. the regular and adequate supply of water and satisfactory services.

It is also possible to collect on an average an amount of Rs.5/- per month per family and this amount is by and large affordable and acceptable. Assuming that the number of users of a public tap is around 15 the panchayat will be able to collect, on an average, a sum of Rs.75/- per standpost per month.This will yield an annual income of Rs.900/- which is slightly more than what panchayat has to pay per standpost to KWA.

8.6. Mechanism for collection

In Kondotty of Malappuram district, the SEU (North) has initiated an experiment in collecting water charges from consumers of public taps. Here, the SPAs are entrusted with the collection of water charges from consumers on a monthly basis. They maintain proper records and the amount collected is deposited in a bank. The practice still continues though there are certain problems that need to be resolved. This experiment supports the feasibility of cost recovery from standpost users provided the consumers are adequately conscientised, and appropriate mechanisms are worked out. It also requires certain modifications/introduction of procedures/rules.

Our suggestion in this regard are·

1. The present system of revenue collection may be modified to improve its efficiency. It would be appropriate if revenue collection responsibilities are separated from O & M responsibilities and even to have a separate cell that works within KWA.

2. Provision of adequate staff in the categories like meter-readers may be provided on priority basis. If that is not possible individual schemes may be allowed to evolve on strategies that allow them to collect revenue.

3. KWA staff may be oriented about the need of raising revenue and the methods of working with people to ensure revenue collection.

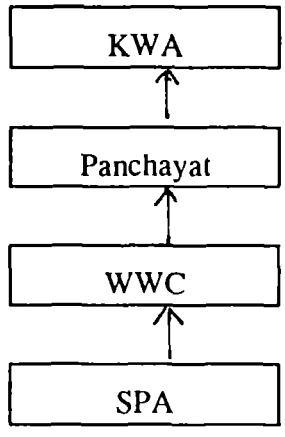
4 Appropriate system/procedure to be evolved to ensure that panchayats make the payment promptly to KWA

CHAPTER IX

FAULT DETECTION, REPORTING AND FOLLOW UP

9.1 Present arrangement

The system of fault reporting as envisaged by the SEU is shown below:



This arrangement was introduced by SEU in 1993. A complaint book is kept in the KWA office and Panchayat Office. The SPAs or WWC member can note leaks/breaks in the complaint register maintained by Panchayat Office. The KWA personnel are to visit the Panchayat Office once in a week and to rectify the faults recorded in the register. This procedure is followed in Mala scheme In the case of the Edappal scheme, the complaint register is kept at the KWA office, Tank site, and any person can record the complaint or send by post to KWA office or pass message over telephone.

The above arrangement is conceived well and ensures participation of consumers and water committees at different levels. However, while operationalising the same, the schemes encounter certain problems. The first relates to the difficulty faced by SPA in filling up the form meant for fault reporting. This is due to the fact that most of the SPAs are either illiterate or neo-literates. The second relates to the delay in the follow

up by KWA which results in the demoralisation of SPAs and WWC members.

9.2 Opinion and suggestions from WWC, SEU and panchayat presidents/members

9.2.1 Opinion of WWC members

WWCs play an important role in the fault reporting system as they receive first level information on fault from SPAs or other users of public tap. The Secretary, who is also the ward member, informs this to the panchayat. In Mala, fault reporting is done more systematically compared to Edappal where the SPAs fill up a form in triplicate supplied to them by SEU. While one copy is kept with SPA the other two copies are forwarded to panchayat. KWA receives one of these copies keeping the other with the panchayat. panchayat also records complaints reported directly by the general public. In Edappal the system is somewhat different. Here, the users of public, and not necessarily the SPAs, can record the complaint in the register kept with KWA office or Tank site. They can also inform as in the case of Mala through SPAs and WWCs.

WWC members in our sample, in general, were satisfied with the present arrangement. However, they are dissatisfied with the follow up action taken by KWA. Their opinion on these aspects are given in the following table.

Table 9.1 **Opinion about the existing arrangement of fault reporting**

Opinion	Mala		Edappal	
	No. of WWC members	% to total	No. of WWC members	% to total
1. Arrangement is satisfactory	18	90	9	69
2. Arrangement is not satisfactory	--	--	1	8
3. No opinion	2	10	3	23

Table 9.2 **Opinion about follow up action by KWA (fault repair)**

Opinion	Mala		Edappal	
	No. of WWC members	% to total	No. of WWC members	% to total
1. No follow up or fault repair	1	5	2	15
2. Delay in follo up or repair	11	55	8	62
3. Prompt follow up	6	30	1	8
4. No option	2	10	2	15

The reasons mentioned by the WWC members about the unsatisfactory service/follow up by KWA are:

(i) The contractors who undertake the repair work are in general, not interested in attending minor repair work as it is less profitable to them.

(ii) The repairs are attended by inexperienced workers resulting in low quality service.

(iii) Attitude of KWA officials that do not give importance to prompt fault repairs.

9.2.2 Opinion of Panchayat Presidents/members

Panchayat president/members are, by and large, satisfied with the present arrangement of fault reporting (4 out of 5 in each schemes).

However, regarding follow up action by KWA they also express more or less the same views as that of WWC members. The two main complaints voiced by them in this context are

(i) lack of cooperation from KWA.

(ii) delays in getting the faults repaired.

They made the following suggestions to improve the effectiveness of the system.

(i) Include a KWA official in the WWC to ensure better involvement

(ii) The KWA officials should make regular visits to project area to detect faults and to make corrective steps.

9.2.3 Opinion of SEU

The study elicited opinion of SEU units about how the system of fault reporting and follow up work in both schemes. As mentioned earlier the system differs slightly in Mala and Edappal. In Mala, panchayat plays a crucial role in bringing the faults to the notice of the people. In Edappal, panchayats do not come into the front for the SPAs/other public tap users or WWC members report the fault directly to KWA office where a complaint register is maintained.

Both the SEU units consider the system being followed satisfactory. However, they are dissatisfied with the results regarding fault reporting The KWA according to them is not giving due importance to complaints of minor nature such as leak in taps and

pipes. This results in delays in fault repairing which demotivates the SPAs in reporting complaints.

The SEU units have offered certain suggestions to improve the system. These are:

(i) Activise the Panchayat Water Committee and ensure the attendance of Assistant Engineer or Asst. Executive Engineer from KWA in the meetings. Such meetings should review the action taken by KWA on faults reported.

(ii) KWA should send rectification report on faults reported to their notice to the panchayat on a regular basis.

(iii) KWA should have one official solely responsible for looking into the complaints/faults and to initiate necessary follow up action.

(iv) Provide adequate supply of spare parts tools etc.at sub-divisional level to avoid delay.

(v) KWA may entrust the responsibility of minor repairs to panchayats or WWCs

9.2.4 Opinion of KWA

The KWA officials were also asked about their opinion regarding the existing reporting system and the follow up actions taken by them. Their opinions in this regard are of two types; one relating to the reporting system per se and the other relating to the delay or inadequacies in their service.

Some of the KWA officials expressed their doubt about the need for elaborate arrangements or channels of fault reporting. They argue that the complaints brought to their notice by any consumer, irrespective of whether it comes from WWC/Panchayat, will be treated the same.

KWA officials do admit that there are certain delays in attending the faults for which there are genuine reasons. These are:

1. Lack of sufficient funds at sub-divisional level for repairs.

2. Lack of adequate staff for monitoring and supervising the repair work.

3. Limited financial and administrative powers at sub divisional level which causes delay in taking action.

4. Lack of cooperation from contractors in completing the work on time.

9.3 Suggestions

The study indicates that the fault detection, reporting and follow up arrangements that is being followed in the schemes require certain modifications to make it more effective. Our suggestions in this regard are:

1. Activise the Panchayat Water Committee. This committee consisting of panchayat ward members and president and a KWA official is the appropriate forum for taking necessary follow up of the complaints and the actions taken. The committee should meet once in a month and review the complaints and action taken.

2. The practice of filling the complaints card in triplicate by the SPA may be discontinued. This practice is causing inconveniences to SPA who are illiterate or barely educated. Further, when SEU withdraws from scene it would be difficult for any other agencies to provide these forms as it involves cost. When these complaint cards are discontinued SPA can report the fault informally to WWC which in turn can record it in the register maintained at panchayat.

3. The three-tier system of fault reporting involving SPAs WWC and Panchayat has to be retained. Each one of these structures plays a specific role and are interlinked to make the reporting system function smoothly. The comparatively poor performance of fault detection and follow up in Edappal illustrates this. In

the present system of fault reporting in Edappal the panchayats do not have any specific role which might have resulted in the poor performance.

4. Since the SEU plans to withdraw itself from its present responsibilities vis-a-vis the various structures it is necessary to consider alternate supportive arrangements. This is so because we feel that the various structure like SPA and WWC have not reached the level of maturity to sustain themselves. Perhaps, the Panchayat may be in a position to take up this role. However, anticipating this problem these structures may be equipped through training/orientation during this transitional phase to perform their roles.

CHAPTER X

FUNCTIONALITY STUDY

Functionality study has been introduced by SEU to study the utilisation of public taps and the nature of services received by consumers. The study is also part of their effort to involve people (beneficiaries) in the upkeep and management of water supply schemes to make it efficient and sustainable.

10.1. Background and Present Status

Mala and Edappal scheme began the study in the year 1993. In both schemes stand posts were selected from each of its panchayat on the basis of some criteria such as (a) the use of different sources of drinking water and (b) the availability of water over time from sources other that piped water (traditional sources). Based on the above criteria few stand posts were selected from areas where

there is no scarcity of water from traditional sources throughout the year

there is scarcity during summer seasons but not throughout the year

there is lack of potable water for most of the year in traditional sources.

The study is mainly intended to collect information about

(a) the availability of water in public taps
(b) the time during which the water is available and
(c) the quality of water supplied.

The information is collected through a card specially prepared for the study. This card is designed to collect information for a month on daily basis for each selected stand post. The SPA collect information or fill these cards and pass it on to the Field

Organisers who inturn gives them to the SEU office for processing. The card specifically records the exact time during which water was available, the quality and the pressure of the flow.

The data thus collected are processed at the respective SEU officers and the consolidated report is conveyed to the concerned Executive Engineer on a regular basis. The SEU also brings out occasional notes or reports on the basis of the data collected through these studies.

10.2. The study and its use

Functionality study initiated by the SEU, if utilised properly, generates valuable information for monitoring the water supply schemes. The use and the advantages are:

1. Data on the supply of water at different points of time of the day can help KWA to regulate water supply and link it with the demand or use pattern of consumers.

2. It helps to check the quality of water supplied and to take corrective steps.

3. It provides information about the seasonal variations in the use of water in different localities which again help the authorities to regulate water supply accordingly.

4. The collection of data by stand post attendants who themselves are the users of the tap on a voluntary basis has certain advantages. it gives them a sense of involvement which consequently can help them perform better. It also does not involve any additional cost.

The functionality study and the data generated are essential feed back for water authorities. It helps them to see how effectively the services have reached the consumers and to plan corrective steps if there are flaws. It also makes them accountable to the

consumers and encourages a healthy interaction between them and the people.

10.3 Functionality study and KWA

The effectiveness of functionality study depends on how the information has been utilised by KWA for monitoring the water supply. Unfortunately, no such effort has been taken up by KWA so far and the reports received by the executive engineers remain unattended. When this problem was discussed with KWA officials they reported that it is difficult to act upon such reports without specific instructions or orders from higher level authorities of KWA.

10.4 Suggestions

The functionality study is an important tool for monitoring the water supply schemes and KWA can effectively use the information for improving the delivery of services. Our suggestions about the functionality study and its uses are as follows:

1. The study at present is conducted by SEU. We suggest that it should be continued even after the exit of SEU from these schemes, because it provides valuable data on how the services are delivered to the consumers.

   KWA can now take up this responsibility and continue to use the SPAs for collecting the necessary data. The cost involved in this exercise is minimised which the KWA can well afford.

2. KWA may evolve an appropriate MIS that incorporates the data generated by the functionality study.

3. The section level committee, for which orders have already been issued by the KWA, can consider this information and can instruct the respective sub-divisions to take necessary action.

4. KWA at the higher level may issue necessary orders to make it binding on the part of KWA at various levels to utilise the functionality study.

CHAPTER XI

PANCHAYAT RAJ SYSTEM AND MANAGEMENT OF RWS SHEMES

The 73rd amendment of the Constitution of India, has necessitated the creation of Panchayat Raj institutions at the Village, Block and District levels. According to this amendment, several subjects including drinking water coming under the state governments' purview have been transferred to the Panchayat Raj institutions.

11.1. Kerala Panchayat Raj Act: Provisions related to Water Supply

The Kerala Panchayat Raj Act 1994, envisages the following changes in the context of drinking water/water sources:

All the powers relating to stand posts and work relating to water supply will be vested with the Village Panchayat. These tasks will become the rights and responsibility/liability of the Village Panchayat from the date on which this power is entrusted to them (Section 218 Sub Section 2).

Besides, Section 166 (Sub Section 1) also stipulates the following as the essential responsibilities of Village Panchayat:

i) Protection of Public Wells

ii) Digging of wells and tube wells for either irrigation or for drinking water and their protection.

iii) Implementation of water supply schemes either entrusted by the Kerala Water Authority or otherwise.

11.2 General Implications

The various provisions in the Panchayat Raj Act mentioned above have significant

implications on the equation between KWA and Panchayats. The KWA was set up as an autonomous body in 1984, with a view to bring in under one agency the entire drinking water supply schemes in the state. The process of centralization was completed in 1991 when the KWA become the sole agency responsible for supplying drinking water. The Panchayat Raj system when introduced in the state, may alter the monopoly of KWA, which can open up several possibilities of sharing the responsibilities of operation and management of existing schemes.

In this context, the provisions in the Panchayat Raj Act mentioned earlier have the following implications:

1. The Village Panchayats (VPs) will now have the entire responsibility of implementing water supply schemes and their maintenance as per Section 166 Sub-section 1. This will have immediate impact in terms of sharing of responsibilities between KWA and VPs. The provisions in the Panchayat Raj Act are not very specific in this regard. However, it does envisage some division of responsibilities which has to be worked out at appropriate levels.

2. Sharing of responsibilities may also mean sharing of cost. This again will have to be discussed at appropriate level. For example, in case the VPs are entrusted with the responsibilities of maintenance of the distribution system in their area, they have to incur expenditure on salaries of maintenance staff, spare parts and other materials, etc.

3. These changes would necessitates the VPs to consider the different options of raising resources. In the present set up the Panchayats are only required to pay the specified rates to KWA. Taking up additional responsibilities as mentioned above, will compel them to take the issue more seriously.

4 A major implication of the Panchayat Raj Act is that the VPs can now consider alternate or parallel drinking water supply schemes independent of KWA. This may result in far reaching changes in the existing arrangement. These are:

i) The KWA will loose its monopoly in providing drinking water and has to be more accountable to the public in terms of adequacy and quality of water, fault repairing, fixing of water charges, etc.

ii) This further implies that the KWA has to function in a cost effective manner and reduce the operational expenses. In short, KWA has to become more efficient and consumer oriented.

iii) The community will benefit as they have alternatives to fall back, if KWA fails to provide satisfactory service.

iv) Alternate schemes initiated by Panchayats can also ensure more community participation at all levels, because such schemes will be within the reach of community and familiar. It also involves simple technology familiar and acceptable to community.

v) The creation of alternate schemes by Panchayats may also require participatory management structures.

11.3 Implications on SEU structures

The role of the existing structures like the SPAs, WWCs and PWCs have to be examined in the context of two eventualities anticipated:

1. the exit of SEUs from the schemes, and
2. the introduction of Panchayat Raj.

SEU plans to withdraw itself from these water supply schemes by the year 1996. This will necessitate the various structures like SPAs, WWC, and PWCs to stand on its on and continue to perform their functions. However, our field study indicates that none of these structures reached a level of maturity to sustain themselves without the guidance and support of an external agency.

The introduction of Panchayat Raj will result in more power to the village panchayat on matters relating to drinking water.

The following questions become pertinent in this context:

1. Can these structures function effectively without the support of SEU?

2. Are these structures relevant in the context of PR system?

3. In case it is necessary to retain these do they require any modification in terms of role functions etc.

4. If these are not relevant can we think of any other arrangement to make the schemes function more effectively?

As already indicated that none of these structures can function without the guidance and support of an external agency. In fact our field observation both in Mala and Edappal showed that the field organizers of SEUs are working closely with the SPAs and WWCs in motivating educating and conscientising them. Withdrawal of SEUs will definitely affect the functioning of these structures adversely.

The second question is regarding relevance of the SEU structures. Though the village panchayats are going to be powerful with financial resources etc. they may not be able to function effectively without the support of certain structures to provide them basic data on availability of water etc. More over to ensure the community involvement in drinking water it is necessary to have some structures.

The SPAs representing the actual users of the public tap will continue to play a major role. It is therefore essential to maintain this structure The PR system will open up more opportunities for the panchayats to share some of the O & M responsibilities. The SPAs can undertake minor repairs for which they have to be equipped. Appropriate training programmes to train the SPAs are essential in this context, for which the Panchayat has to take the initiative.

2. The WWCs may not be able to function effectively with the withdrawal of SEU. However a committee at the ward level is necessary to provide a link between the users and the panchayat and to bring problems related to drinking water to the Panchayat. In addition to their present responsibilities, WWCs can support SPAs in ensuring minor repairs by providing the necessary materials/spare parts required for the same. The Village Panchayat can now entrust this responsibility to WWC and supply the materials/spare parts to them. It can also monitor the water supply including the conduct of functionality study at regular intervals. We therefore suggest that this structure may be continued with the necessary modification indicated above.

3. The Panchayat Water Committee with the President of Panchayat as its chairman is a powerful body which is defunct now. With the transfer of power relating to several subjects including drinking water to the VP level the PWC can function effectively. This structure can act as the apex level body to work in close liaison with the VP. It can monitor the functionality studies and advise the VP on matters relating to drinking water.

11.4 Partnership Management of RWSs

The Panchayat Raj Act will open opportunities for a partnership management between the KWA and VPs on rural water supply schemes. The panchayats which at present are the clients of KWA in terms of water supply will acquire power when the responsibility is shifted to the VPs. The role of VPs in water supply schemes will also be different in this context, which calls for a partnership relationship with KWA. Sharing of such responsibilities can be done in the following manner:

i) The VPs can provide alternate sources of water by digging wells, tube wells etc. The entire expenditure can be met by the VPs.

ii) Some of the O & M responsibilities can be shared between the VPs and

KWA. Major repair work can be entrusted to KWA and the minor repair work can be undertaken by the VPs. To execute the minor work the VPs can either employ contractors or create a technical section by appointing some technical staff.

iii) The VPs can collect water charges along with other taxes from the private consumers. There is already a provision in the Panchayat Act empowering the VPs on this. The water charges collected can be given to the KWA. The KWA can thus be made more accountable to the VPs.

iv) In the case of public taps the VPs can either collect water charges from the users or they can provide water free of charge. Since the users of public tap belong to low income group the water charges can be borne by the VPs from its own budget.

CHAPTER XII

KWA AND SECTION LEVEL COMMITTEES

In the present set up the KWA has the overall responsibility of managing the water supply schemes. Their responsibilities range from design, execution, and operation and maintenance of the Schemes. They have been fulfilling these responsibilities on their own with minimum involvement from the beneficiary population. This approach has undergone certain changes in rural water supply schemes implemented with bilateral assistance. These schemes, different from the rest, insist on peoples involvement right from planning to its operation and maintenance. The SEU structures were created to facilitate this process.

The need for a change in this direction of involving people in the management of water supply schemes is increasingly felt by KWA also. The order issued by the Government of Kerala[5] and subsequently by the Managing Director of Kerala Water Authority[6] is a step in this direction.

As per these orders committees have to be constituted in each water supply section with Assistant Engineer as Convener. The members of the committees are representatives of local bodies such as Presidents, Chairman or Mayor as the case may be, and the members representing the divisions of the district councils. The committee shall elect one among them to preside over the meetings. It is also mentioned in the order that officers of Kerala State Electricity Board, Block etc. shall also be invited to participate in the meeting whenever necessary.

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[5] G.O.No.28/93/LAD dt.2.2.93

[6] KWA/HO/GL2/2691/93 dt.22.2.93

The committee is constituted mainly to discuss the problems related to water supply and to resolve them. The Executive Engineers of the concerned divisions and Superintendenting Engineers of the Circles will review the results of such meetings at periodic intervals and try to find out solutions to the problems. The Regional Chief Engineer will ensure that this new programme is implemented successfully.

The section level committee has the potential to function as an effective control and monitoring mechanism. The advantages are as follows:

(1) Since the committee has been constituted by the government it enjoys certain authority and therefore can legitimately take decisions to implement.

(2) The committee consists of persons holding important positions such as panchayat presidents, and district council members. This will ensure better rapport between KWA and local bodies and also better coordination among departments.

(3) As KWA has to take the lead with Assistant Engineer as the Convener its involvement in the management of the scheme will be better.

(4) The committee provides an opportunity for KWA to work closely with the local bodies. This may help to work out strategies to share responsibilities with local bodies and also to ensure prompt recovery of water charges from Panchayats.

(5) The committee envisages an effective monitoring system involving higher level officials which ensures adequate support from top in solving problems at section level.

However in spite of the above advantages KWA has been rather slow in constituting and utilising this structure. Our field study indicates that the committees are not operational in any of the three schemes. The situation requires attention at the higher level.

12.1 Suggestions

The section level committee needs to be strengthened to make it more effective especially under the Panchayat raj system. Following are our suggestions in this regard.

1. The Government of Kerala and the KWA have issued orders to constitute the section level committee as early as February 1993. The progress made in this direction is not assessed at all. Our field observations based on the three water supply schemes of Edappal, Mala and Choondal substantiate this. KWA may issue necessary instructions now to the Divisional and Sub-divisional offices to immediately constitute/activate the committees.

2. In the light of the panchayat raj system the composition of the committee may be suitably altered. In the place of district council members, which will be defunct after the introduction of panchayat raj, secretaries to the panchayats both village and block level may be included. The Committee may also include a few representatives of WWCs.

3. The orders issued to constitute the section level committee envisaged a reporting system involving Executive Engineers, Superintendenting Engineers and also Regional Chief Engineer. The system needs to be streamlined by evolving a suitable MIS for this purpose.

4. It is also necessary that some of the powers necessary for decision making may be delegated to this committee to ensure its smooth functioning.

CHAPTER XIII

SUGGESTIONS AND RECOMMENDATIONS

The study has indicated two sets of problems - one relating to the financial feasibility and the other relating to the management of the water supply scheme. The analysis on financial aspects lead to the conclusion that there is need for cost- effectiveness in the operations. Management of RWS schemes has problems relating to the existing structures and arrangements which calls for modifications. These structures will also have to be re-examined in the context of introduction of Panchayat Raj (PR) system. Similarly other arrangement regarding the functionality study and fault reporting system has to be reassessed.

Our suggestions and recommendations in this context are given below:

13 Financial viability of schemes in terms of cost and income

13.1. O & M Coast

One of the conspicuous aspect of O & M cost of all three projects is that it exceeds the revenue, both in absolute and per unit terms. Edappal, compared to other two schemes stands first in this regard with Rs. 38.36 lakh incurred on O & M items. The corresponding figure for the other projects are Rs.29.68 lakhs (Mala) and Rs.1.82 lakh (Choondal). This is reflected clearly in the O & M cost per unit volume of water also.

The reasons that contributed to this high expenditure on O & M are as follows:

1. High expenditure on staff.
2. Lack of any system with regard to repairs and maintenance
3. High input cost

(i) High expenditure on staff

Pay and allowances as a component of O & M cost is 37 per cent in the case of Edappal and 52 per cent in Mala. Choondal is an exception and spend only 20 per cent

of the total O & M cost.

This high cost as reflected in the estimate may be on account of more number of staffs than necessary in the schemes, especially at higher levels.

It appears that the staff structure that exist now is lop- sided where the executive and administrative level positions are more compared to the operative level staff. This might have contributed to the high expenditure on pay and allowances.

Another issue, also related to the above, is the absence of any scientific staff pattern related to the management of water supply schemes. KWA has certain norms about the number of operating staffs based on the production capacity of schemes. Similarly there are other norms, most of which are PHED norms, for other categories of employees. But KWA seldom strictly adhere to such norms. This has created a tendency to have more staff at higher level contributing to high expenditure on account of pay and allowances.

(ii) Lack of any system in repairs and maintenance

Lack of a rational system in repairs and maintenance contributes to wastage and unnecessary expenditure. The existing procedures of KWA on how the repairs and maintenance are carried out are rather ambiguous and inadequate. Moreover, these are not made available to those who are responsible for doing it.

Some of the related issues in this context are:

1. Lack of an effective management information system (MIS) or a monitoring plane where information is collected, processed and utilised for monitoring activities.

2. Absence of any preventive maintenance - leading to unnecessary expenditure that are otherwise avoidable.

3. Cumbersome administrative procedures and restrictions causing delay in taking decisions at the appropriate operational level. Administrative support from higher level is also missing.

(iii) High Input cost

Energy charges form another significant component of the O & M cost and it varies from 23.4% of the total cost in Edappal to 45.4% of the total cost in Choondal. This cost is high because of the high rate of electricity charges which is the main form of energy used in many of the water supply schemes. KWA does not get electricity at concessional rate.

It would appear from our discussions with KWA engineers that energy efficiency was not considered seriously at the time of designing the schemes. However, KWA is now aware of the high expenditure they have to incur on account of electricity charges which is attributed to the high rate of electricity charges. This has created concern in KWA about the need for the optimal use of energy. Unfortunately, this concern remains only at the higher level and is not reflected on the operations and maintenance of schemes.

13.1.a. Suggestions for improving financial viability

The list of problems and issues identified above are interrelated and re-inforcing. Some of the suggestions that can be considered are as follows:

1. Evolving a clear-cut O & M plan and strategy. This involves the specification of O & M tasks, fixing the responsibilities to different categories of staff, and giving guidelines for implementation.

2. A work-study/O&M study as the first step in this regard may be conducted choosing one or two representative schemes. This can suggest the appropriate staff pattern in terms of the responsibilities to be performed and job specification in the context of operation and maintenance.

3. An ABC analysis of cost may be attempted to arrive at effective cost reduction strategies.

4. Simplification of procedures within the existing frame work. This can yield tangible results without disturbing the present arrangement.

5. Evolving an appropriate MIS/monitoring plan to facilitate the management to keep track of maintenance, fault repairs etc.

6. It is also appropriate to consider different cost- effective strategies of

   (a) saving energy/alternate source and
   (b) preparation of a plan for preventive maintenance.

The above suggestions relate to the measures that can be taken by KWA. However, in the context of the changes visualised in the PR system the Panchayat can share some of the O&M responsibilities and also the cost with KWA. These issues will be discussed later but such measures may shift the burden of O&M cost from KWA to the PR institutions rather than reducing the actual cost.

13.1.b. Low Revenue

Collection of income from the sale of water has always been a serious problem for KWA schemes. In the case of the three schemes studied revenue collected as water charges was considerably low compared to the cost. The reasons that can be attributed to this are as follows:

1. Inefficient revenue collection system

2. Inadequacy of staff. This has been evident in the case of Mala where water charges based on actual consumption were not collected from 1993 as there were no meter readers

3. Attitude of KWA regarding the need for generating income. This is so because

   (a) lack of accountability on the part of officials as there is no compulsion to raise revenue.

   (b) there is also no compulsion to relate revenue with cost.

   (c) Reluctance of KWA to initiate stringent revenue recovery measures.

4. Lack of awareness on the part of consumers about the cost incurred for the water they use

5. Political considerations that works against deciding on tariff rates on the basis of cost incurred.

6. Unwillingness and unpreparedness on the part of KWA to deal with local bodies who are the major defaulters.

7. Lack of flexibility at scheme level to decide on tariff or revenue collection practices that are specific to schemes.

13.1.c. Suggestions for improving revenue collection

The measures that can be considered to solve the problems related with low income are:

1. The present system of revenue collection may be modified. It would be appropriate if revenue collection responsibilities are separated from O & M responsibilities and entrusted with a separate section.

2. Provision of adequate staff in the categories like meter- readers may be

provided on priority basis. Though this may increase the cost, it will be compensated by additional revenue. Alternatively individual schemes may be allowed to work out their on strategies to collect revenue.

3. KWA staff may be oriented about the need of raising revenue and the methods of working with people to ensure revenue collection.

4. Orient consumers/people about the value of water so as to motivate them to pay water charges. Appropriate training strategies may be evolved to achieve the above.

13.2. Management of Rural Water Supply Schemes

At present the management responsibilities of the rural water supply schemes of Mala, Edappal and Choondal is vested in KWA. The SEU has created certain structure to facilitate this process through involving committee. These structures are the SPAs, Ward Water Committees and Panchayat Water Committees.

The problems related to each of the above structures have been explained. Our suggestions regarding these structures in the context of the PR system to be introduced shortly are:

1. The existing arrangement and linkages between of SPA, WWC and PWC may continue with the following modifications.

   a. SPAs may be encouraged to involve themselves in taking up the additional responsibility of attending minor repairs of stand post. They have to be trained to perform this role and also have to be supplied with necessary material and a `repair kit'.

   b. WWCs have to be reoriented in their functioning and have to play the coordinating and supervisory role at ward level.

In the absence of SEU, the Panchayat can entrust the responsibility of collecting information about the availability and quality of water (functionality study) to the WWC. Processing of this information can be done at the Panchayat level.

The Standing Committee envisaged in the Panchayat Raj Act can coordinate these tasks.

WWC members need to be oriented to the performance of these tasks for which appropriate training may be provided at regular intervals.

c. The PWCs which are almost defunct need to be activated.

Under the PR system, the Village Panchayat has provision to constitute Standing Committees on subjects like drinking water to plan and monitor the various activities coming under this head. The composition of the committee and other details are to be decided by the Panchayat depending upon the requirements. The PWC is expected to perform all possible functions that need to be performed as the apex structure, like the proposed Standing Committee. It is therefore, suggested that the PWCs may be activated at Village Panchayat level the members may be included in the Standing Committee on drinking water with the authority under the Act.

It can (a) effectively coordinate with KWA in the management of the existing scheme, (b) plan and execute alternate water supply schemes if such a need arise, especially in improving the existing village facilities such as village wells etc., (c) decide on the maintenance and upkeep of the water supply facilities that fall in their territory, (d) decide on the cost-recovery measures in consultation with people and all other related issues on drinking water, its availability and quality.

The new Committee also have to be equipped to assume their new role Some of

the specific steps that are suggested in this context are:

(i) consultative workshops to decide on the responsibilities, roles, linkages and procedures to be developed. It would be appropriate to hold these workshops at different levels, starting from the Village Panchayat to district and at state levels, consolidating the results and setting broad guidelines in the context of the Panchayat Raj set up.

(ii) Orientation training to WWC members to equip them to perform their responsibilities better and also to work with other structures.

(iii) Development of systems and procedures, regarding sharing of responsibilities with KWA, especially on repairs and maintenance; tariff and revenue collection practices.

13.2.1 Section Level Committee

As per the Government order the KWA was given instructions to constitute committees at Section Level Consisting of AE as Convenor, Presidents of Local Bodies and members of District Council. The Committee was expected to meet regularly and review the drinking water situattion and solve the problems related to it.

These committees, however, are not functioning effectively at present. They need to be strengthened, especially in the context of panchayat raj systems and the suggestions made with regard to PWCs and the anticipated standing committee on drinking water. The following are our suggestions:

The Government of Kerala and the KWA have issued orders to constitute the section level committee as early as February 1993. The progress made in this direction is not assessed at all. Our field observations based on the three water supply schemes of Edappal, Mala and Choondal substantiate this KWA may issue

necessary instructions now to the Divisional and Sub-divisional offices to immediately constitute/activate the committees.

In the light of the panchayat raj system the composition of the committee may be suitably altered. In the place of district council members, which will be defunct after the introduction of panchayat raj, secretaries to the panchayats both village and block level may be included. The Committee may also include a few representatives of WWCs.

The orders issued to constitute the section level committee envisaged a reporting system involving Executive Engineers, Superintendenting Engineers and also Regional Chief Engineer. The system needs to be streamlined by evolving a suitable MIS for this purpose.

It is also necessary that some of the powers necessary for decision making may be delegated to this committee to ensure its smooth functioning.

13.3. Operational Issues of Water Supply Schemes

While the above section gives broad suggestions about the changes contemplated in the existing structures in the context of Panchayat Raj the present section deals with certain specific aspect of operation such as

1. Cost sharing by public tap users
2. Fault detection and reporting and
3. Functionality study.

13.3.1 Cost sharing

The study indicates that it is possible to collect water charges from public tap users despite their comparatively low economic status. Consumers, however, indicated that their willingness is subject to conditions like the regular and adequate supply of water and

prompt services in terms of fault repairing. The suggestions that may help to improve cost sharing in the schemes are:

1. Evolve a mechanism for collecting water charges using the existing structures. The SPAs may be entrusted with this responsibility, after providing them adequate orientation and training in working with people, maintaining simple records etc. WWC can give the overall support in solving problems that may come up, if any, at SPA level and SPAs can remit this amount with Panchayat.

2. The water charges to be shared by the consumers should not be decided arbitrarily by the Panchayat or the KWA. This has to be discussed in forums of consumers, SPAs, WWC members and a consensus decision may be taken. Such meetings can also decide the other details regarding revenue collection.

3. People/Public tap users need to be informed, oriented and educated adequately before putting this idea into practice An appropriate campaign may be considered in this regard.

4. At present cost sharing by public tap users has been experimented at Kondotty, Malappuram District. It has thrown up certain problems especially about the management and use of the revenue that has been collected from the public. Many of these problems are related to the absence of clear-cut procedures. Such issues are crucial and specific procedures may be evolved.

5. The PR system offers considerable freedom in matters relating to collection of water charges from public tap users. The procedures and systems that are to be developed therefore should take into account this and allow flexibility to make scheme specific modifications.

13.3.2 Fault detection, reporting and follow-up

The fault detection, reporting and follow-up that are being practiced in the schemes studied require certain changes. Our suggestions regarding this are as follows:

1. SEUs have developed an elaborate system regarding fault detection and reporting both in Mala and Edappal. It allows information flow from SPA to KWA through WWC and Panchayat on the assumption that Panchayat can exert influence on KWA to do the repairs in time. However, this arrangement experiences two major problems.

a. the lack of follow-up at Panchayat level and

b. the difficulty faced by SPAs to fill up the forms provided for the purpose.

These problems can be solved to a great extent by

i. activising the PWC and holding meeting once in a month to review the matters regarding water supply and fault repairing.

ii. discontinuing the practice of filling up the forms by SPAs. Instead, they may report the matter to the WWC convenor or members to register it in the Panchayat.

2. In the present set-up KWA officials feel that this elaborate three tier arrangement of fault repairing is unnecessary as they consider reporting faults seriously irrespective of who reported it and take actions within the constraints they face. However, the involvement of the different structures in the fault reporting is necessary as it involves people in the management and demand more accountability from KWA. The present arrangement therefore may be continued but with necessary charges in the context of the introduction of PR systems. major change that can anticipate in this regard is the taking over of the responsibility of certain repairs by the Panchayat itself. This will reduce the dependence on KWA on repairs which is a serious problem. This arrangement may have problems in the beginning but can be solved by training SPAs or creating other arrangements at the Panchayat level.

13.3.3 Functionality Study

Functionality study and the information collected on the services provided by the water supply schemes are important for proper monitoring and ensuring efficiency. We therefore suggest that this may be continued and more the information to be utilised.

The study at present is only an academic exercise without any practical use. KWA, as such, does not consider the importance of this exercise on two ground. (a) that the informations collected through the study are already known to them though not in an organised way. (b) there are no standing orders from higher authorities to consider the reports on functionality study and take any actions.

Some of the measures that can be considered in the above context to make the functionality study a powerful tool for efficient management of the schemes are:

1. provide appropriate training to executive level staff of KWA about the importance of MIS, and the use of information about the services they provide. They should in turn develop an appropriate system to use this information and improve their functioning.

2. KWA may issue necessary orders to make it binding on the part of KWA to use the information generated in functionality study for taking corrective steps.

3. PWC may take up the responsibility of conducting the study in the eventuality of SEU withdrawing from the project area.

4. The section level committee may review the action taken on this study at their meetings.

Annexure I

INTERVIEW SCHEDULE

PANCHAYAT PRESIDENT/MEMBER

Name of Panchayat: Ward Number and Name:

1. Personal details :

1.1 Name and address :

1.2 Education :

1.3 Age :

1.4 Political Party :

1.5 Member since when :

2. Views about drinking water situation in the Panchayat/Ward

2.1 What is your general opinion regarding the Dutch/Danish supported water supply schemes?

3. Panchayat and Water Supply Schemes

3.1 What was the involvement of Panchayat in the scheme?

4. Panchayat and Water Charges

4.1 Is the rate fixed by KWA per tap reasonable? If not give reasons

4.2 Can the Panchayat collect revenue by way of water charges?

4.3 If so how much?

4.4 What would be the public reaction?

5. Panchayat and KWA

5 1 What is the relationship? Does the Panchayat involve in any way about the operation & maintenance of water supply scheme?

5.2 Are you aware of the committee constituted by the Government to discuss the problems of water supply? If so, how regular are such meetings?

5.3 Suggestions for partnership between Panchayats and KWA. Can Panchayat take up some of the responsibilities in O&M?

6. Panchayat and WWC

6.1 Does the Panchayat support WWC and their activities?

6.2 Does the WWC needs modification?

6.3 If yes, why?

6.4 How can the WWC be modified and strengthened?

6.5 Is it necessary that people be included in the management of water supply schemes?

6.6 If yes, why?

6.7 How do you think this can be done?

6.8 When the scheme requires major replacement who is expected to do that?

6.9 Can the panchayat be in a position to take up this responsibility?

6.10 If yes, what sort of problems do you anticipate?

7. Role and Responsibilities of WWC in fault reporting and repairing

7.1 What is the present arrangement?

7.2 How is WWC involved in fault detection, reporting and repairing?

7.3 What are the problems faced by WWC in this regard?

7.4 What is the response of people and KWA in the above?

7.5 What are your suggestions for improvement?

Annexure II

INTERVIEW SCHEDULE

WARD WATER COMMITTEE

Identification Data

Name of Panchayat :
Ward Number :
Year of formation :

1. Role

1.1 Which way is the WWC involved in the water supply scheme?

1.2 What difficulties/problems you face in performing the above tasks?

1.3 Present system of fault detection

Reporting

Follow-up

1.4 What are the specific responsibilities of the WWC on the above?

2. Panchayat & WWC

2.1 What type of help and support do the Committee receive from the Panchayat?

2.2 If inadequate, how can this be improved?

2.3 What are the problems faced by the Committee in relation to panchayat?

2.4 Give suggestions for improvement.

3. WWC and KWA

3.1 In which way does KWA assist and support the WWC?

3.2 What are the problems you generally face with regard to KWA in your functioning?

3.3 What is the response of KWA when fault repairing or any such assistance is sought?

3.4 What does the WWC do if the response is not prompt/positive?

3 5 What do you suggest to improve the coordination and mutual support of KWA regarding the operation and maintenance of Water Supply Scheme?

3.6 What is your view regarding involving KWA personnel also in the Committee?

3.7 What sort of problems and constraints you anticipate in such an arrangement?

4. WWC and the Consumers

4.1 What are the major problems faced by consumers of public taps?

4.2 Do you think the consumer can pay the water tax?

4.3 Do you think the consumers are willing to pay the tax?

Annexure III

INTERVIEW SCHEDULE

STAND POST ATTENDANT

Identification Data

Name of Panchayat	:	
Ward Number	:	
Name of SPA	:	
Age	:	
Education	:	
Year of taking charge	:	

1. O&M Functions

1.1 What tasks do you perform as SPA?:

1.2 What problems do you face in fulfilling the above tasks? :

1.3 Are you trained for your task? :

1.4 If `Yes' give details :

2. WWC & Panchayat

2.1 What type of support do you receive from WWC in performing your tasks? :

2.2 If the support is inadequate, what more do you require? :

2.3 What type of support do you receive from Panchayat/Ward Member? :

2.4 If the support is inadequate, what additional help you require? :

2.5 What type of support do you receive from SEU & KWA? : SEU KWA

1. Type of help
2. Adequate/Inadequate
3. Whether more help required?
4. If so what?

3. Consumers' Participation etc.

3.1 How many beneficiaries/ house holds use the public-tap you manage?

3.2 What sort of help and support you receive from the consumers?

3.3 What are the main issues/ complaints they have?

3.4 What do you do when you receive such complaints?

3.5 What is the level of involvement of other users in the maintenance and upkeep of the tap?

3.6 Will the consumers of public tap be ready to pay some water tax/maintenance/repair charge?

3.7 If `Yes' give details:

3.8 What arrangements can be made to collect this amount?

3.9 What are your suggestions to improve the water supply scheme?

Annexure IV

CHECKLIST

Functionality Study and Fault reporting System
(Information to be collected from SEUs)

A

1. **Functionality Study**

   1.1 When was it started?

   1.2 Why, what are the objectives?

   1.3 How is it done - components of the study and the arrangement created to execute the study.

   1.4 Nature of data generated, who collects, who process it, whether reports available, findings.

   1.5 Who uses this information, for what purpose?

   1.6 Cost of data collection - any additional cost.

2. 2.1 SEU's future plans about functionality studies.

   2.2 Problems - current and anticipated in continuing this study.

   2.3 Suggestions regarding modification.

B **Fault reporting system**

   1. What is the present arrangement - who are all involved and in which way?

   2. Methods of detecting fault, reporting and follow-up - problems faced.

   3. When was it started - Arrangement before this.

   4. Response of the community and KWA.

   5. Is the arrangement effective - problems, reasons.

   6. Suggestions for improving.