

8. PROPOSED UTILITY MANAGEMENT PLAN

The 10 study towns visited can be grouped into three different institutional categories or groups under the Ministry of Environment and Natural Resources.

District water offices: Narok, Meru, Muranga, Wundanyi, Migori and Lamu report to the Ministry directly, Division water offices: Makindu, Webuye and Mumias are included in the respective District reporting, and Kabarnet Sub Area office reports to the Regional area office, which falls under the jurisdiction of the National Water Conservation & Pipeline Corporation, which again operates as a State Corporation under the same Parent Ministry, the Ministry of Environment and Natural Resources.

8.0. GENERAL APPROACH

The approach for the analysis of the 10 towns was to work with a comprehensive base questionnaire that covers the commercial, financial and technical aspects of a water utility system. Interviews and discussions were held with those staff members that are either in charge or responsible for certain aspects of the day to day operation.

For the commercialised systems in Kenya, three sample towns were chosen: Malindi which is operated under a management contract for the NWC&PC, and Nyeri and Kitale Water Company, which are operated on the basis of an agency agreement for and on behalf of the respective municipal councils. Different questionnaires were used in order to obtain information about the problems that they have experienced since commencement of their operation.

The current system of Government reporting and record keeping has made it very difficult to obtain reliable and meaningful data within the given timeframe. The prevailing situation in all systems is that details are available, but neither instantly ready, nor summed up. Consequently numerous figures had to be compiled and abstracted from various ledgers and folders, in order to draw a picture of the current situation. At system level, the consumer ledger was found to be the most resourceful book of information concerning number of accounts, their condition (metered, non-metered, active, in-active), monthly consumption, arrears and payments received. It was therefore decided to use the consumer ledger information and take a snapshot picture of the situation for the month of June 2000. Where annual figures and records were available, those were absorbed for the Financial Year 99/00 in order to calculate monthly averages for comparison with the snapshot month June 2000. To substantiate procedures in place, it was considered essential, to question the figures and details that are routinely forwarded to the Head Quarter.

As procedures do continue at Head Quarter level it was as well attempted to find out, what procedures have to be undergone and is the information that is provided from Divisional or District Offices analysed in order to make planning assignments possible.

The details and procedures representing the NWC&PC area office in Kabarnet have been analysed upto the Regional Office level only. Operational decision making, funding and most personnel related issues are vested in the powers of

the Regional Manager. Instructions and procedural requirements, retained by the Head Office or vested in the State Corporation Act , are however considered for the analysis.

8.1. EXISTING WATER SUPPLY& SANITATION SYSTEMS

8.1.0. Overview Of All Systems Visited

All records and details abstracted in or compiled for the ten towns visited, are compiled in Appendices: A3 for Narok Town, B3 for Meru Town, C3 for Muranga Town, D3 for Kabarnet Town, E3 for Makindu Town, F3 for Wundanyi Town, G3 for Migori Town, H3 for Lamu Town, I3 for Webuye Town and J3 for Mumias Town. System situation description has been prepared for every town visited. Appendix K 3 holds questionnaires used for the commercialised systems and all summary statistics. Summary Table ST 8.2. contains the verified statistics for all 10 towns, using the month of June 2000 as the month for which verification could be done, based on the information abstracted from the various consumer ledgers. Comparisons between the towns are drawn from the same overview called "verified statistics summary" on details considered most relevant.

8.1.0.1. Utility Systems Organisation

8.1.0.1.1. Staffing:

All systems have a high number of unskilled Subordinate Staff being employed with different responsibilities. The O&M department integrates not only the source, treatment and distribution aspect of the water systems, but it is also responsible for billing and revenue collection. Within the billing and revenue collection department, majority of all staff have a technical background. Training, if offered, is within the technical field, financial or commercial training is not really considered. The staff assigned to the distribution system do as well undertake meter reading for which no schedules are available. Control over staff activities and whereabouts becomes very difficult. The number of consumer accounts per staff ranges from 23 in Migori to 110 in Mumias. Organisation Charts have been drawn for all 10 towns, based on the information collected and are to be found under the Appendix of the respective town.

The managers responsible for the various systems have no commercial or managerial, but technical background. There is no training offered to prepare officers into their managerial responsibilities, even though the assignment described in The "Schedule of Duties for the Ministry of Water Resources" – January 1999, issued by the Permanent Secretary, describes the duties of every District Water Officer as:

Representative of the MWR in the District and responsible to the PWO/Central for the following duties and responsibilities:

- Overall planning, control and management of all water related matters in the District, including financial management thereof
- Any other duties as may be assigned

8.1.0.1.2. Office Set-up, Facilities and Transport:

While some District offices have adequate space, Division offices visited are in dire need of a decent working- and consumer-receiving-environment. Hard furnishing can be termed as basic, but storage facilities for keeping and archiving documents reflect additional requirements in all places visited. Shortage of stationary or calculators is common everywhere.

The new NWC&PC office in Kabarnet has been taken over from the contractor just recently and basic requirements are still in very good condition.

The transport situation of all systems visited is below requirement. Water systems that are shared with the District water operation do have the advantage that transport can at least be shared in case of an emergency. All other systems do depend on well wishers, public transport or they walk.

8.1.0.1.3. Consumer and Meter Information:

The existing level of information concerning the status of the meters, disconnection/ re-connection or new connection statistics or their operability, must be termed as low. In a number of towns, the available though estimated figures are not diverting too much from the snapshot situation taken for the month of June 2000, but others are completely "off-track" and reflect that the value of information has to be more emphasized.

Ad hoc information was difficult to obtain anywhere. The statement that everything is available somewhere, somehow, but not in a comprehensive and meaningful format, easy to analyse, applies to all systems. As an example can be taken that the cost for maintaining a vehicle cannot be abstracted from one ledger card, but different kind of items are reflected on different ledger cards for certain expenditure categories. This means, that the cost determination could only be made by going through a number of ledger cards and then compiling the same information.

8.1.0.1.4. Production and Consumption:

For a number of systems, neither production nor consumption figures can be determined with certainty.

Where master meters were either not working or simply lacking, pumping hours were used to calculate the production; where gravity flow does not provide meter information, the situation was reflected, based on the assessment offered by the staff of the respective water system and then compared with the engineer's information. All systems operate well below their capacity, which can be related to:

- Limited use of power, because more pumping cannot be justified with equally increasing billed consumption
- Weak distribution systems, which cannot take the increased pressure and result in higher UfW
- Faulty pumps
- Reduced source capacity

To confirm consumption details is even more difficult, as the majority of consumer meters are not operational. The number of estimated accounts range from 31% in Wundanyi to 99% in Mumias. The verification of consumption details was only

possible for the month of June 2000, by abstracting consumer ledger information in a uniform format for all systems. While the information still reflects a number of discrepancies, it was considered the closest one can get, within the scopes and limited timeframe of the study.

While Migori, Webuye and Mumias have a very high estimated number of accounts (88% - 99%), the consumption abstracted exceeds the production considerably or is almost the same and raises the question of: what is the assessment tool for estimating accounts, or better their consumption?

8.1.0.1.5. Un-accounted for Water (UfW):

Where production and consumption details are not very reliable, the determination of UfW is difficult and equally unreliable. While most systems do fill monthly returns with arithmetical calculations on the UfW, the verified information reflects differences. Where a calculation of UfW was possible, the percentages range from 1% for Webuye town to 77% for Kabarnet town (excluding Mumias and Migori towns which reflect a higher consumption than production).

The overall calculated loss, expressed in Kenya Shillings is considerable. The verified month of June 2000 calculates for 8 out of the 10 towns, for which UfW calculation was done, a total of approximately Kshs 6,374 million per month, or extrapolated: Kshs 76,492 million per calendar year.

As the calculation is based on water lost and the average tariff calculated for every town, this calculation should serve as a guiding figure only, as the figures used for the calculation are based on the month of June 2000 information and might vary, when a deeper analysis is carried out. The loss furthermore does not yet capture the full cost of the loss, because the current tariff is considered as not cost covering.

The determination of cost represents one of the most basic problems again applying to all systems, which starts by trying to establish the actual expenditure. With the current level of information cost can only be assessed but not established.

8.1.0.1.6. Billing and Revenue Collection:

Many monthly billing records and returns were found to be estimated. Various explanations were offered, but all centered around the fact, that the information has to be monthly and manually abstracted from all consumer ledgers after the billing has been completed. The time available between completion of billing and submission of the monthly return is considered too short to complete the time consuming exercise. As monthly returns do not seem to be returned by the Head Quarter, the estimation is seen as an accepted practice. While the practice of estimation could be accepted for the given reason, the reconciliation at the end of the FY is missing, and annual details for the Head Quarter are simply wrong. Only Muranga town and possibly Makindu seem to be reporting actual monthly records. The tariff increment effective November 1999 could not be seen in many of the estimated billing figures for most systems, neither was it apparent for some of the revenue officers, that delayed implementation of the tariff increment should be captured with a retro-active adjustment.

The issue of estimation of monthly billing returns was not applicable for Kabarnet, as the water system only obtains meter readings and the Regional Office prepares computer generated bills. Monthly information about what was billed to the consumer should be correct.

For the verification exercise of June 2000 bills, the consultant filtered out consumers with the same actual consumption and noted, that different billing amounts seem to be calculated for the same consumption. As the majority of the billing officers do not have a calculator, this can be seen as a possible explanation for the variations. Appendix K 3 – ST 1.1. shows the analysis and reflects the situation for a few sample towns. The same bill variation seems to be the case for Kabarnet however limited in number, explanation for which should relate to the billing program.

Revenue collection records and returns are based on records obtained from the District Commissioner's office. Only minor discrepancies were noted, which can be explained by the fact, that report preparation does not necessarily fall together with calendar end month.

The attempt, to verify consumer payments against reported revenue collection, failed. The payment situation abstracted from the consumer ledgers for the month of June, 2000 was explained to reflect the situation as at 30.06.00. Unfortunately ALL the 9 water systems (excluding Kabarnet) involved in the exercise, misunderstood the information requested for and reflected last payments up to December, 2000.

The billing efficiency for the various towns ranges between 22% in Kabarnet town and 64% in Narok town, while the collection efficiency ranges between 22% and 87% for Muranga. It should be noted that Migori and Mumias have not been considered for this comparison, as their billing efficiency is exceeding 100 % and unrealistic, as consumption should not be higher than the production.

The combined billing and collection efficiency ranges between 15% and 49% and is suggested to be used as one of the criteria for selecting priority projects.

Muranga is the only town where consumers voluntarily come to the DC's office to ask for the amount due for payment, which they then pay, without even having received the bill. Bills are only issued for GOK institutions, schools or companies on request. While Lamu operates in a similar way, it must be noted that Muranga merges this fact with a high billing and collection efficiency.

8.1.0.1.7. Average Tariff:

The average tariff had not been calculated in any of the towns visited, because it is not required for any of the GOK returns, hence not a commonly used term. The calculation of the average tariff, where possible, was prepared for the month of June 2000. It ranges between 16.57 Kshs for Migori and 42.31 Kshs for Wundanyi.

The June 2000 average tariff read in conjunction with the percentage of consumers billed on 10 cbm minimum charge, indicates which towns have a substantial base of minimum consumers. The minimum charged consumers

range from 12.37 % in Webuye to 78.14 % in Lamu. An analysis for the number of consumers falling into the various consumption brackets is commented on in the report for the various systems and gives an indication of the revenue base and the consumer portfolio.

8.1.0.1.8. Debt Situation:

The monthly debt situation is reported to the Head Quarter, whereby brought forward balances are increased by the monthly ("averaged or estimated") billed revenue less revenue collected. For all towns it was therefore found, that balances abstracted from the consumer ledgers did not correspond with the reported information. Discrepancies reflected are substantial in some cases. It can however not be established where or when those differences slipped into the system. An analysis was undertaken to split between GOK, major and minor consumers where possible. The one consumer taking the biggest share of unpaid bills in District towns, is the Government of Kenya. While the debt situation increases on a monthly basis, no effective measures seem to be in place to improve on the prevailing situation. Collection targets are set for the WS systems, but collection of GOK debt must be termed as very difficult and the possibility of involving the MENR Head Quarter should be considered after verification and substantiation of existing GOK debts.

Verified debt, as abstracted from the consumer ledgers, for all the towns visited amounts to: Kshs 61,899 million as at the end of May, 2000 and Kshs 64,678 million as at the end of the Financial Year 99/00. This can be interpreted such that the debt outstanding, increases by approximately 3 million per month for all the ten towns. Even though this information has been abstracted from the respective consumer ledgers, it must be pointed out, that a much more intensive analysis will have to be done, to confirm the collectable debt, as it includes disputed bills relating to wrong billing calculation, wrong meter reading or no water situations. The abstracted figure can however be used as an indicator. When comparing the total outstanding at the end of the Financial Year with the value of the annual water loss of approximately Kshs 64,8 million, the need for intervention concerning UfW, becomes even more apparent. Remedial efforts should concentrate and start with the attempt to reduce this aspect of water lost.

8.1.0.1.9. Funding:

Salaries, power and chemical expenses are paid through MENR Head Quarter. All other expenses at District level are funded through A.I.E. (Authority to Incur Expenses).

The A.I.E. earned during the FY is not automatically the A.I.E. received. Any application, pending approval at the end of the FY, is not returned for resubmission in the new year, but null and void. It appears, that the 10 towns have earned a total of Kshs 17,930 million in A.I.E., but only received and incurred expenditure amounting to Kshs. 17,182 million. When a comparison is drawn between A.I.E. earned and A.I.E. received on a town by town basis, it shows that some towns managed to receive more A.I.E. then they have actually earned while others received considerably less. It could not be established with certainty how the procedure of "receiving more" operates.

8.1.0.2. Utility System Procedures

Existing procedures were analysed against the facts, figures and details obtained. Statements were questioned against the background of facts established.

8.1.0.2.1. Administration:

8.1.0.2.1.1. Staff:

No personnel management, training or recruitment procedures are in place and the approach of utilising staff where and when needed, results in a situation of no control over staff movements. Moving the technical staff into billing and revenue, instead of recruiting qualified and trained staff for the commercial aspect of the utility operation reflects on the system efficiency. The staff morale is equally affected and the low salary structure and delayed promotions attribute to the often understandable "not really concerned" situation. Sanctioning within the civil service structure has not been very effective in the past. The worst to happen was a transfer with no financial repercussions. At the same time positive efforts are not appreciated which often leads to the above indifference.

The recent retrenchment exercise has however changed the prevailing opinion concerning job security. The criteria for the recent retrenchment has not been understood by the staff, as in a number of systems, important and knowledgeable staff members were removed.

8.1.0.2.1.2. Consumer Accounts:

Clear guidelines on new connection, dis-connection, re-connection and any other routine procedure, are not in place. Especially for cases of recently gazetted changes, the gazette notice seems not sufficiently explained with the consequence, that every system handles the issue differently. Concerning new meters, deposit levels or delayed tariff implementation, wrong implementation of the gazetted notice translates into loss of revenue. If for example the tariff adjustment information and implementation instruction reaches the systems with a certain delay, the gap between gazettement and implementation should be closed. Some systems did so, others did not.

The maintenance of consumer and connection records must be considered as vital for any utility system. All systems lack however clear guidelines and control at system level. The ever prevailing shortage of stationary or operating material is the excuse and/or explanation for messy filing or files and books not found or records not kept. Clear guidelines on consumer record keeping were not found and the recording varies from application form to meter reading book to consumer ledger, depending on the WS system.

8.1.0.2.1.3. Meter Reading, Billing and Revenue Collection:

Meter reading schedules and procedures are not in place and there is no control over the process, neither the staff entrusted the exercise. Wrong or no meter reading affects the billing efficiency and eventually revenue collection, as consumers dispute by simply not paying. When wrong or over estimated bills go along with no supply and service, the payment morale drops and illegal activities increase. While all District water offices have water bailiffs on their staff list, they

are not used to handle cases of illegal water consumption, but only deal with water rights and granting permits for water abstraction.

All systems operated by the MENR issue manual bills and varying bill formats are used. Formats of the system have not been improved for years and some reflect for example consumption stated in gallons, while almost all consumer meters are read in cbm. This increases the risk of error calculations. Majority of consumer bills are hand delivered or collected from the water office, as no funds are available for mailing.

Systematic dis-connection and control procedures were not found to be in place. Explanations given relate always to shortage of funds and/or lacking plugging material, no transport or shortage of staff. Once an account is dis-connected, the consumer retains this status, unless he comes forward to regularise his/her account. Routine checks on long dis-connected accounts, are not practiced or not really possible, because the transport or staff necessary, is not available. This fact bears a high risk of undetected illegal re-connections and contributes into the high UfW.

8.1.0.2.1.4. A.I.E. and Procurements:

An A.I.E. is calculated based on the monthly revenue collection and a certain A.I.E. percentage, determined by MENR, and varying from town to town. In the case of the towns visited, the percentage ranges between 60 % and 90 %. The basis for the different percentages could not be established.

The receipt of an A.I.E. is affected by many factors and in all cases causing delays for procurements and the day to day operation. Appendix K 3 – Figure 8.2. illustrates the 17 steps between revenue collected at the DC's office and the approved authority to spend. The approved A.I.E. can only be used for procurement, if the Local Purchase Order (L.P.O.) processing procedure has been complied with. Suppliers often reject to supply against an L.P.O., because the payment processing procedure is another lengthy procedure to follow. Appendix K 3 – Figure 8.3. illustrates the path a pro-forma invoice has to take, before a cheque can be issued. Supplies are limited to listed suppliers within the District and the District Tender Board has to approve such suppliers.

The issuance of a cheque to a supplier is furthermore dependant on District Office liquidity and priorities set by the District Administration. As the District Administration is not only responsible for A.I.E. of the water department, but all the other GOK departments represented within the District, priorities might be given to other departments, depending on the situation. Collection efforts from the water department can be frustrated by such factors, which are beyond their control.

As long as quotations are obtained as required, and vouchers are signed by the respective signatories, expenditure seems the responsibility of the respective District Water Officer. It must only be ensured that it can be booked against votes that have been budgeted for. Finally, the District Administration has to account for the expenditure incurred, while the Ministry concerned is no longer involved. The complicated and lengthy procedures do not seem to relate to Financial Control at the end of the process.

Transport and staff related expenditure absorb a relatively high percentage of the approved and received A.I.E., while stationary or other inexpensive items are said to be lacking. It could not be established based on which criteria approved A.I.E. are spent and whether quotations obtained, reflect a realistic market price, when

compared. The process shows that Water department requirements are not only at the discretion of the water department through its representative the District Water Officer, but mainly depend on the District Administration, which is answerable to the Office of the President and the Treasury/Ministry of Finance.

Divisional Offices are affected by the same procedure, but their requirements have to undergo an additional step in order to be incorporated into the District requirements.

The Kabarnet area office submits all its requirements through the Regional Office, which in turn still has to follow the same or similar GOK procurement procedures.

8.1.0.2.2. Operation & Maintenance:

No preventive maintenance is in place, neither are technical manuals available. There is no guidance on standards and no procedure control over quality of water. Consumer meter servicing is neither scheduled, nor controlled or guided. Master meter preventive or routine maintenance is not covered by any procedure, and servicing lacks skill and the necessary tools. While some provincial water offices do have the necessary equipment, they lack spares. The reason for all shortcomings is said to be the lack of funding.

Chronically empty stores are explained by the same lack of funding. Only Lamu town had stock balance records available, which could relate to its location and island status. In most cases it was explained that procurements mainly relate to a technical problem that has to be attended to and parts are used as soon as they are available.

The WS Operators Handbook was found in the Webuye WS system, but the available version seemed very old (without any printing date) and not reflecting any system specific information or guidance.

8.1.4 Kabarnet Water Supply & Sanitation System

Kabarnet Water Supply is a National Water Conservation & Pipeline Corporation operated system and serves a population of approximately 17,500 people. The scheme has newly built offices and staff housing which have been constructed under the Kirandich Dam Project, Phase I. Phase II, covering the rehabilitation of the distribution system and construction of a sanitation system is understood to be planned.

Current source of supply is from Kapchemuswo Dam, 4 boreholes (2 new, 2 old) and Kirandich Dam for which construction has been completed, but it has not been formally handed over. The Water Scheme reports directly to NWC&PC, Nakuru Regional Office.

8.1.4.1. Utility System Organisation:

8.1.4.1.1. Staffing:

The total number of staff is 29. Refer to Appendix D3 Figure 8.1.4. – Organisation Chart.

The Area Manager used to work as a Soil Technician on the Kirandich Dam Project and was appointed in June 2000. He holds a Diploma as Water Technician.

Staff skill is limited, as 65% of all staff work under the category of Subordinate Staff.

The distribution system has 9 Staff members who are supposed to do meter reading, meter servicing, line patrol, disconnections, reconnections, new connections and bursts attendance. There is no billing section because meter readings are forwarded to the Regional Office for billing. The Accounts Department has only a cashier and a clerical officer who are responsible for receiving payments from consumers and depositing monies so collected in to the KCB collection account. Payments are reconciled with the Regional Office once a week.

A driver is available, but there is no vehicle to drive. There is however an indication that once Kirandich Dam is formally handed over, the project vehicles might be available.

Technical training is offered in principal, but for some time there have been no training opportunities due to lack of funds. In the past Area Managers used to be taken for administration courses at KIA.

There is no organisation chart in place and no job descriptions available.

The index of number of accounts per staff member is:

Staff	Consumer Accounts	Accounts/Staff
29	768	26.48

8.1.4.1.2. Office Set-up, Facilities and Transport:

New offices have been built with staff houses under the Kirandich Project, all within the same compound, next to the low-level main reservoir. There are 2 offices and a small store and 1 safe. One telephone line is available but cut-off for non-payment, receiving calls only. Basic hard furnishings are provided including tables, chairs and cabinets. Only one 1990 Yamaha motorbike is available.

8.1.4.1.3. Consumer and Meter Information:

Information is basically lacking at system level, because available data is usually sent to the Regional Office. Meter reading data is sent to RO, where the bills are processed and one copy is retained for the monthly reading. Available monthly returns compiled from the RO, only show total consumption, number of connections, arrears, collections, billing, meter rent, and any adjustments. Consumer application forms are sent to the RO for approval and other consumer information would have to be obtained from these application forms, however no summary of consumer data was available.

Information was obtained for the month of consumption June 2000, which is reflected as the July 2000. The computerised summary referred to as Revenue Data Return was received from the Regional Office and could not be verified further - as no other information could be obtained. It is to be noted that under NWC&PC, July transactions relate to June consumption billing information.

An abstract of the comparison between information available or provided, with the verified information, is shown here below. Complete information is available in Appendix D3 Table 8.1.4. and Table 8.4.4.

Detail	Provided by Kabarnet	Verified for June 2000	
Registered Consumers:	800	768	
Metered:	600	470	
Working:	310	206	
Not-Working:	262	161	202
Un-metered:	28		
Disconnected:	200	199	
Major Consumers:	Not readily available	12	
Minor Consumers:	Not readily available	557	

The distinction between Major and Minor consumers is based on the June 2000 consumption exceeding 100 cbm for Major consumers only.

8.1.4.1.4. Production and Consumption:

Production:

Detail	Per Month as provided	Average per month as verified
Design Capacity / Month	420,000 m ³	
Production / Month	60,000 m ³	51,000m ³
Production / Day	2,000 m ³ (1400+400+200)	1,700m ³

The design capacity for Kirandich is 14,000 m³ per day, Kapchomuswo Dam is 400 m³ per day and the 2 old Boreholes are 200 m³ each per day, and 2 new boreholes with additional 400 m³ per day, result in a total capacity of 15,200 m³ per day.

The actual production of Kirandich dam is however based on hours pumped, resulting in currently 700 m³ per day (5%) and determined by the area manager. Higher pumping hours result in higher power bills, but cannot be turned into increased revenue, as the distribution system is weak and approx. 65% of the consumer meters are not working.

Kapchomuswo Dam is estimated at 400 m³ per day and one of the two old boreholes is estimated at 200 m³ per day. The second old borehole, with the same capacity, has a burnt conductor that needs repair and an electrician is expected to be sent from Nakuru. The two new boreholes, which were done under the Kirandich project in 1996 produce 400 m³ per day. (Therefore there are 4 boreholes)

Operation chart stationery from Nakuru was not available since August, and pumping is therefore estimated as no records are currently available.

Consumption:

A total consumption figure of 11,305 m³ is extracted as summary from the Revenue Data Return from NWC&PC for the month of July (representing June consumption). No breakdown as to actual or estimated consumption in summarised form is available. The verified details from Appendix D3 Table 8.1.4. are used for comparison. It is to be noted that above mentioned consumption figure of 11,305 m³ corresponds closely with the Grand Total consumption of the same report, which records 11,500 m³

Detail	%	June 2000 as provided	%	June 2000 verified
Actual Consumption		5,402	47	5,402 m ³
Estimate & Flat Rate		6,098	53	6,098 m ³
Kiosks			-	-
TOTAL:	100	11,305 m ³	100	11,500 m ³

The June 2000 consumer portfolio, as analysed here below, shows that Kabarnet has a substantial number of minor consumers, consuming up to 10 cbm per month and representing 34.45% of all billed connections.

Consumption Steps	Number of Bills		Revenue Earned (June 2000)	
	Actual	Estimate	Actual Kshs	Estimate Kshs
0 to 10 cbm	138	58	34,400	14,350
11 to 20 cbm	35	288	12,625	103,805
21 to 40 cbm	15	8	11,130	7,060
41 to 60 cbm	6	5	9,145	6,460
61 to 100 cbm	2	2	4,800	7,500
> 100 cbm	10	2	160,835	10,320
TOTAL:	206	363	232,935	149,495

8.1.4.1.5. Un-accounted for Water (UfW):

According to the information provided from Kabarnet, the total production of 51,000 m³ per month compared with billed consumption of 11,500m³ results in a water loss of 39,500 m³ or 77.45 %. Using available figures the value of UfW, calculated for June 2000, with the average tariff of Kshs. 33.25 is therefore Kshs. 1,313,375.00

8.1.4.1.6. Billing and Revenue Collection:

Billing:

The Billed and collected revenue is reflected in Appendix D3 Table 8.3.4 and abstracted from Monthly Revenue Data prepared from the Regional Office. Due to the

absence of consumer ledgers it was not possible to verify the information as the only source available was the monthly computer print outs. A notable feature is numerous adjustments, which appear every month. A committee sitting at the Regional Office has to approve and recommend any proposed adjustment. The information or recommendations on the ground are said to be given limited consideration and limited effort is made to verify with the Officers at the scheme level.

Based on the production details partly provided from Kabarnet and partly adjusted concerning Kirandich Dam, of 51,000m³ for the month of June and using June 2000 consumption of 11,500 m³ shown in Appendix D3 Table 8.1.4. the **Billing Efficiency for June** stands at **22.55%**

Revenue Collection:

The revenue collected is reflected in Appendix D3 Table 8.3.4 and extracted from the monthly Revenue Data print outs. July 1999 to October 1999 data could not be availed and hence average is calculated based on November 1999 to June 2000 obtained from the Regional Office.

Detail	June 2000 as provided	Average 11/99 to 06/00 as provided	June 2000 Verified
Billed Revenue:	382,430.00	457,810.80 (1-6)	382,430.00
Collected Revenue:	371,789.20	324,684.30 (1-6)	371,789.20

As there are neither consumer ledgers nor meter reading books available the provided data is used to calculate the **Collection Efficiency for June 2000** as **97.21 %**

8.1.4.1.7. Average Tariff:

The average tariff is taken to be based on June 2000 records from Appendix D3 Table 8.1.4 as Billed Revenue Kshs 382,430.00 / billed consumption of 11,500 cbm = verified **Average Tariff for June 2000 Kshs 33.25 per m³**

8.1.4.1.8. Debt Situation:

The debt arrears situation as provided by Kabarnet is computer generated every month. The format of Appendix D3 Table 8.3.4 provides a summary extracted from the monthly computer printouts. Verification can actually only take place if meter reading books were available to relate the same to calculated bills and payments received. These base details could however not be obtained.

Using information from Appendix D3 Table 8.1.4., the situation **prior to the June 2000 bill** is:

Detail	Kabarnet Debtors as provided	%	Verified Debtors	%
Total Debtors	1,639,626.00	100	1,639,626.00	100
Major Consumers				
	Not readily available		825,620.00	50
Minor Consumers	Not readily available		814,006.00	50

8.1.4.1.9. Funding:

Funds available for direct use by the Sub-Area are provided by retaining 50% of the new connection fees and reconnection fees respectively. As nobody reconnects and no new connections were effected since May 2000, there is no money available on the ground. Other station requirements like salaries, procurements, power or chemicals are either paid through the Regional Office or Head Office.

At the Regional Office, a simplified accounts package is used to capture costs incurred on behalf of the Sub-Area. Expenditures for the period January 2000 to July 2000 have been compiled in Appendix D3 Table 8.5.4. as details for July to December 1999 could not be accessed.

Even though there is a telephone payment reflected for Kshs. 241,019.25, the telephone at Kabarnet was not working at the time the consultant visited the Sub-Area in October 2000 and it was said to have been cut off years ago. Head Office Expenditure was not obtained.

8.1.4.2. Utility System Procedures:

All current procedures, as far as the office and field operations are concerned, are covered in the Appendix D3 Questionnaire 8.1.4. It was the approach of the consultant to verify as many as possible technical, financial and commercial details to substantiate procedures with the facts obtained.

8.1.4.2.1. Administration:

8.1.4.2.1. 1. Staffing:

Staff related issues are dealt with at the Regional Office. The Regional Office communicates with the Head Office where necessary. Annual Staff appraisal forms are filled every year and forwarded to the Regional Office but no response is received. No staff training is being undertaken due to lack of funds. No recruitment, promotion or disciplining procedures were found at system level.

8.1.4.2.1.2. Consumer Accounts:

Consumer information is held in the **application** form only. No consumer ledgers or meter reading books are in place. At the Sub-Area level information is widely lacking which makes it difficult to handle a consumer complaint relating to consumption or billing. Disputes raised by consumers are therefore delayed while trying to get more information from the Regional Office. Consumer application forms have to be approved at the Regional Office and hence subjected to delays.

Consumers wishing to close their account have to seek their **refund** from the Regional Office where a deposit account is held.

The **transfer of an account** to another consumer is only effected after the old existing debt is cleared. An application form has to be filled by the consumer requesting to take over the account and pays Kshs. 200.00 transfer fee as well as a refundable deposit.

The **Change of address** procedure requires the consumer to fill in another application form, which is forwarded to the Regional Office for the change to be effected in the computer.

8.1.4.2.1.3. Meter Reading, Billing & Revenue Collection:

Already prepared meter reading formats are received from the Regional Office and meter reading starts from the 16th of the month. Meters are read for approximately one week. Readings obtained are then forwarded to Nakuru by 23rd of the same month. Bills are supposed to be received by the end of the month for distribution to the consumer.

Billing:

Billing is computerised and done at the Regional Office in Nakuru upon receipt of meter readings from Kabarnet. The Sub-Area Manager checks all the bills before they are hand delivered to consumer. Obvious wrong billing is held back and clarified with the Regional Office first. If need be the bills are returned to Nakuru and credit notes / adjustments are effected with the next bill.

Disconnection:

The disconnection list is prepared from the Regional Office, because they have updated consumer data. The exercise is supposed to be done twice in a month. The disconnection exercise is done by physically removing the meter from the field.

New Connection:

The consumer expresses the wish to have a connection. The area Manager fills the application form, a survey is carried out and Nakuru Regional Office has to approve the application, thereafter financial requirements such as amount payable and materials required are communicated to the consumer. A pipe fitter installs the connection upon the consumer's payment and the provision of required fittings. It takes about one month to have a new connection appear on the meter reading sheets and the Area Manager has to check that new connections are in the billing. A number of new connections seem to have been done previously, without following the right procedure and simply do not appear in the Meter Reading or Billing lists. Consumer/staff collaboration was suspected, and resulted in a transfer of the respective staff

Revenue Collection:

Consumers make payments at the Sub-Area office where, receipts are issued. The revenue collected is banked daily. Once a week, the cashier goes to Nakuru Regional Office to submit returns. It could not be established whether a comprehensive reconciliation is done at the Regional Office, which opens loopholes for mismanagement of funds.

8.1.4.2.1.4. Procurement:

Procurement requests are made to the Nakuru Regional Office by use of requisition forms or a telephone call if urgent. The RO makes the necessary arrangements to deliver the requirements. The issue is done through form S11 counter requisition and issuance of a receipt voucher. The person receiving goods signs an S13 counter receipt voucher.

General information is that it takes time for the Regional Office to act. A burnt out conductor for one of the old boreholes was reported in August 2000 by asking for an

electrician, but no action taken by the time the Consultant checked last in December 2000.

8.1.4.2.2. Operation & Maintenance:

Intake

No procedure laid down, staff attend to problem when there is a problem. No preventive procedures in place for maintenance. As Kirandich Dam had not been officially handed over yet by the time of the visit, no information could be obtained.

Lines and Appurtenances

No routine or preventive maintenance procedures are in place. Problem is only attended to as soon as money or material is available from the Regional Office Nakuru.

Master Meters

No service or maintenance plan in place. One dicto meter at the new low level main reservoir.

Consumer Meters:

No procedures or records of field activities are in place. Meter servicing is said to be done occasionally when a meter is found not working, otherwise no action possible. The Regional Office encourages the consumer to purchase meters for new connections, but this new policy had not been given out in form of a written instruction.

Stock

No stock available, as procurements as required are done from the Regional Office in Nakuru.

Operation Manuals:

Only logbook about pumping hours.
No manuals for technical procedures.

8.1.4.3. Community Projects:

The consultant did not obtain any information about community projects within the Kabarnet Water Supply area.

8.1.4.4. El-Nino Project:

No information was obtained concerning any on-going El-Nino activity.

8.1.4.5. Recommended Priority Measures:

There is general feeling of lack of support from the Regional Office in terms of requirements and feedback as well as frustrations on time consuming decision-making processes.

It is the understanding of the consultant that the Un-accounted for Water (UfW) in Kabarnet is extremely high with approx. 77%. Current daily production of 1,700m³ in comparison with the current demand should actually satisfy the current demand. It is however understood that current supplies to the consumer are well below demand. Therefore the reduction of UfW must be given the overall priority.

Un-accounted for Water is made up of:

- Physical losses in the transmission and distribution system
- Wrong meter reading and billing, and
- Water theft, illegal or unknown connections

To reduce the Water losses, it is recommended to give the following priorities:

- 1. Full rehabilitation of the existing distribution system, including standardised meter connections,**
- 2. Replacement or repair of all faulty and flat rate consumer meters and**
- 3. Management and staff Training for the relevant staff members**

Phase II of Kirandich Dam was already planned for the strengthening and augmentation of the existing distribution system as well as the sanitation system for Kabarnet town.

Whether Phase II, or the proposed rehabilitation of the distribution system under this JICA 10 Towns study, will eventually attend to the issue, consideration should still be given that the main problems in Kabarnet, which relate to:

- Meter reading or billing quality.
- Meter condition related problems (64% faulty or flat rate)
- Physical losses within the system, and
- Incomprehensive consumer data base information,

The collection efficiency in Kabarnet is high, with 85.80% for June 2000 and 71% as a calculated average for the 2nd half of the FY 99/00.

While all other recommended activities of the Utility Management Plan are seen equally necessary for Kabarnet, the consultant should concentrate on the replacement of meters, and scheduling and control of meter reading activities in conjunction with facilitation of basic repairs.

8.1.4.6. Recommended Project Implementation Plan:

Based on the Action Plan Activity Phases as reflected in Appendix K3 Summary Table ST 8.4., the following Project Implementation Plan for Kabarnet is outlined here below for the 3 different Phases mentioned.

8.1.4.6. Recommended Project Implementation Plan:

Based on the Action Plan Activity Phases as reflected in Appendix K3 Summary Table ST 8.4., the following Project Implementation Plan for Kabarnet is outlined here below for the 3 different Phases mentioned.

The overall assumption under which the proposed activities will reflect in the expected results, is, that major players and stakeholders ensure that recommended reforms in the Water Sector are implemented.

Other assumptions under which the proposed activities will reflect in the expected results are:

Assumption 1:

- Funds for approx. 300 consumer meters are available
- Funds for computer hardware (3), printer (1), Windows 2000 and Office 2000 software, additional transport (1 x 4WD pick-up, 3 motorbikes (1 meter reading, 1 line patrol, 1 new connections)) and basic office equipment are available,
- Funds for remuneration of the proposed staffing organisation is available,
- Funds for 6 months interim operation, while cash collection is re-organised such that funds remain available at system level, and
- Funds for the involvement of the management consultant

All funds must be available or planned for at the beginning of the management consultant's involvement. Refer to Table 4.4.: Cost Estimate for Rehabilitation Works for the Kabarnet Water Supply.

Assumption 2:

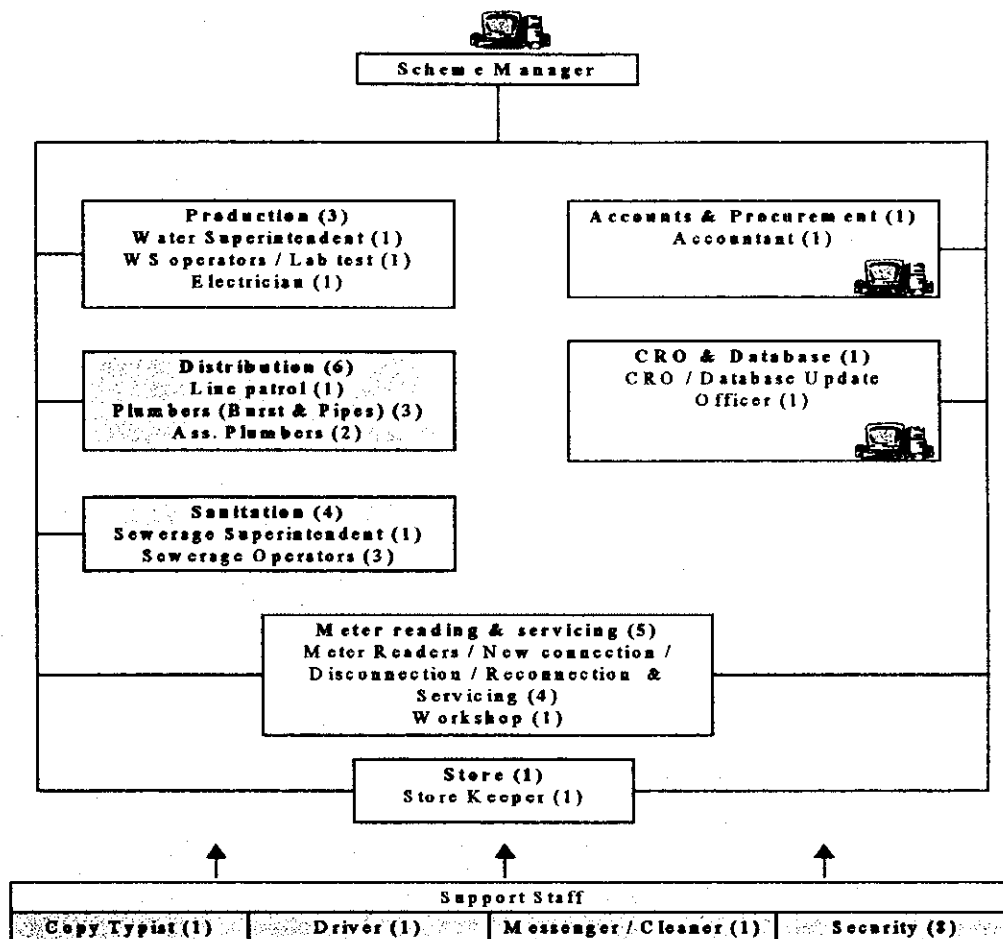
Staffing re-organisation, training and selection of staff as recommended by the management consultant receives the necessary support from NWCP.

Assumption 3:

The reduction of UfW is expected as an immediate result of the meter replacement, meter reading reorganisation, billing improvement and management / training-on-the-job-support. Meters are replaced in a standardised manner and on a monthly basis by the Kabarnet WS staff.

The minimum time involvement of management consultant support is taken as 12 months.

8.1.4.7 Recommended Kabarnet Organisation Chart:



NOTE:



= Computer allocated to department

Total recommended number of staff = 29 (additional 4 for sanitation)

NOTE:

- Currently no sanitation, but planned during Phase II of Kirandich, therefore only provisionally noted in the chart.
- Production relates to 4 (2 new and 2 old) boreholes, Kapchemuswo Dam and bulk supply received from Kirandich Dam at the main reservoir.

The possibility of out-sourcing security services, master meter and pump maintenance should be surveyed and assessed during the management consultancy contract. Implementation should be considered during the preparation of the rehabilitation works. In connection with the supply of master meters, it is assumed the supply of an adequate number will make a service contract, conditioned to the supply, possible.

Casual labour to support trenching or cleaning of blocked sewers will be sourced from the labour market whenever the need arises. It is further recommended that consumer payments be received through existing Financial Institutions

8.2. COMMUNITY SYSTEMS WITHIN THE EXISTING UTILITY SYSTEMS

Only three towns had community maintained systems within their supply area. Western Province, unlike any other province visited, has enjoyed massive support of community projects through Finnish Aid. Phase 1 of the KIFINCO project initiated and financed between 1981 and 1995 almost 4000 community projects. The current Phase 2 has now 4 main components under the overall objective of "increasing access to safe water for improved health and well being of the communities in Western Province, by increasing community management skills for maintenance, operation, improvement and replication of water facilities and for the protection of water resources":

- Monitoring and evaluation whether systems are functioning
- Support to those communities that approach the project and are prepared to contribute
- Provincial/District capacity building
- Water Resource Management

Implementation of new or rehabilitation projects are done through external contractors, while MENR staff is involved in the technical supervision. During Phase 1 all work was done through external staff, which led to frictions between MENR staff and those employed from outside.

Phase 2 concentrated at the onset on awareness creation amongst all District and Divisional Offices, using the ToT approach (Train the Trainer), and then involved other leaders and representatives of communities, to deseminat the new approach.

8.2.1. Makindu

There are four operational and functioning community systems within the Makindu water supply area, but information could only be obtained from three.

Kikumbuli Community took over 136 accounts in 1992, because they received water from Umani Springs. No information could be obtained on how it is managed, but community members are receiving water.

Amref financed 2 additional projects, the Kai Water Project and the Nzumi Water Project. Both systems serve approximately 7.400 people. Amref conditions were the involvement of the community in trenching and laying of the pipes and construction of the tanks. Community members were trained in the technical field and bookkeeping, and training included formulation of the By-laws.

Both systems operate smoothly and the Makindu WS system receives payment of bills promptly. Maintenance of the line is the responsibility of the community. Artisans and Kiosk attendants are from within the community and receive a salary for the work they do. The Community plans to use the money on the account for maintenance and expansion of the line.

The Mulili Water Project was financed by German Agro Action and started its operation just recently. It serves approximately 3.700 people. The approach for the project was similar to Amref's, whereby the community is actively involved in

the work during and after the completion.

Bulk supply from Makindu WSS to all communities at Kshs 15,00/cbm and no problems have been experienced so far.

8.2.2. Migori

The Nyasare Water Supply community project is registered under the Society Act and has been in operation since 1994. The project was financed by the Austrian Government and serves the rural and part of the urban population of Migori town. The community has 989 paid up members.

The management and operation of the system is paid for work done and O&M cost incurred monthly are covered out of the collected revenue. The management comprises of the Chairman, Vice chairman, Secretary, Ass. Secretary, Treasurer and Ass. Treasurer.

Since 1997, the organisation has been operating without donor funds. Even though the community faces problems in revenue collection, there are efforts to increase the tariff. The organisation works closely with the District Water Officer Migori.

The community intends to come up with a phase 2 project, to develop other water sources and the Institute for International Co-operation (Austrian Aid) is willing to assist. They have also applied to take over Migori Water Supply under the Ministry.

8.2.3. Webuye

Webuye has one community project for which no information could be obtained. The Muchi Milo Community project, initially financed by KIFINCO, is non-operational since 1995. Electrical fittings were vandalised twice, now the project seems completely stalled. KIFINCO in Kakamega had information that chairman of the project has political ambitions and is therefore suspected to have political enemies, who could be responsible for the vandalism. The new approach of KIFINCO is the "demand driven approach", i.e. communities can come for help, if they are prepared to contribute 50% into the cost.

Muchi Milo treasurer did not seem to know, neither did the Divisional Water Officer, even though KIFINCO had informed all Districts and Divisions creating awareness down to the communities through leaders and representatives. Consumers are now neither receiving water from the mains nor through the community project.

8.3. PROBLEMS AND SHORTCOMINGS OF THE EXISTING SYSTEMS:

All systems visited suffer from a number of problems which in turn lead to more shortcomings, ultimately translating into:

- Low efficiency on production,

- Limited supply situation,
- Billing below expectation, and
- Revenue collection, which cannot sustain the operation.

An assessment of the problems seen and experienced in the various systems visited, is represented in the Problem-Symptom-Cause Matrix under Appendix K 3 – ST 8.3. To various degrees the systems show that neither the Head Quarter nor the water systems do know what they produce, what is in place, what is outstanding, what are the actual cost for the water production and/or what is the financial position they are in.

Community systems established with the involvement and / or contribution of the community, combined with training into the management and operation, seems more successful, than those systems that have been simply handed over to the people. This equally reflects in the second phase approach of the KIFINCO project, which is demand driven and with financial involvement of the community.

8.3.1. Division Specific Problems:

Divisions operate under the District offices. The systems visited operate under even more difficult circumstances. All problems are similar to the problems experienced in the Districts, because whatever is a problem for the District results in an even bigger problem or longer delay for the Division.

The criteria for category Division or District does not relate to the population served. While Mumias is a Divisional office, with less than a decent office and the necessary skilled staff, it serves a population of 110,400 people, Wundanyi is a well equipped District office and serves a population of 7,600 people. The same applies to Webuye Division office, serving approximately 73,000 people and lacking the absolute basics.

The Division is run with no imprest at all and the most basic requirement like making a photocopy or using public transport to visit the District office, expects the staff member to pre-finance the expense and claim it from the District in due course. Refund procedures can take weeks, even months.

8.3.2. Districts Specific Problems:

The biggest problem seen at District level is the A.I.E. funding and procurement procedure. While the District Administration is involved throughout the lengthy procedures, the District Administration has to cater for all the Government Departments and does not necessarily give the Water Department priority over other Departments. Special efforts in revenue collection may result in Nil A.I.E. received, as was the case in Narok, where the approved A.I.E. came just before the end of the Financial Year and lacking liquidity at the District Administration office resulted in an approved A.I.E. but no funds. Un-utilised A.I.E can then not be carried forward into the new FY.

8.3.3. NWC&PC Area Office Specific Problems:

The area office is totally dependant on the Regional Office and faces the same problems as the Division Offices under the Districts. Decision making does not take place on the ground and any requirement has to be organised through the

Regional Office.

Recent changes turned a small imprest previously available into a NIL cash flow. The 50% of re-connection and labour charges do not seem to come forward. Even the smallest operational requirement becomes a problem. A further problem is, that billing and consumer related issues face considerable delays as they cannot be dealt with immediately. They have to be forwarded to the Regional office and reply has to be awaited. Disputes are decided by a committee at the regional level, while the recommendation of the area manager seems to be given lesser or often no consideration.

8.4. MENR HEADQUARTER PROCEDURES, SHORTCOMINGS AND IMPEDIMENTS

Every utility system visited had the feeling that the Head Quarter receives monthly forms and returns only to file the same away. No reaction is received. Considering the meaning of reporting, facts and figures should be used for planning, control and management decisions.

As the majority of the information reflects discrepancies or plain gaps and no reaction comes from the Headquarter, it means that either the information is not used for decision making, or the discrepancies are not seen and plans are based on wrong information.

Procedures and tangible details are more difficult to obtain at Head Quarter level than at the District. Efforts by the consultant to get clear and substantiated information, were fruitless in most cases. Similar to the record keeping at District or Division level, information is available somewhere and somehow, but the magnitude of data handled at the Head Quarter makes the search even more complicated.

8.4.1. Personnel Issues and Procedures

All Division, District and Province staff salary matters are dealt with at Head Quarter. The structure seems to be such that within the personnel department at the Head Quarter, one officer is allocated a certain number of staff numbers. Following up several personnel issues for the District, can result in having to see several officers for the same problem relating to several staff members. The attempt to obtain comprehensive remuneration details for the towns visited, failed.

8.4.2. Power

Payment of power bills from the District has been changed during the last Financial Year. The processing procedure at District level had caused a number of power accounts being cut. Current practice is, that power bills for all water systems operated by the MENR, are paid for from the Head Quarter. If the bills are received at District level, they are passed on to Nairobi for settlement. As many bills are paid for many Districts with one payment, to find and obtain details for any particular WS System, requires lengthy searches. The question as to whether credits are correctly reflected on the following power bills, could not be established.

8.4.3. Chemicals

Sourcing and procurement for chemicals is done centrally for all the WS systems operated by MENR. The procedure involves an annual open tender, approved by the MTB (Ministerial Tender Board), followed by the CTB (Central Tender Board). While the District gave the information that chemicals have to be collected from the Nairobi Central store, the information at the Head Quarter was, that chemicals are delivered to the Districts and only additional requirements over and above the planned quantity have to be collected. It is to be analysed, whether the centralised procurement bears any price advantages over the system level procurement, as the existing system does not reflect any other advantages.

As chemical requirements are planned from the Head Quarter and information of chemicals from the Districts is in most cases based on estimated past experience, the question arises also, whether there is a realistic basis for actual chemical requirements, relating to actual production?

8.4.4. A.I.E. Issues and Procedures

The A.I.E. procedure originates from the District and has to be processed through MENR Head Quarter and Ministry of Finance/Treasury, before it can go back for further processes to the District. Appendix K 3 – Figure 8.2. and Figure 8.3. reflect the whole process, which is lengthy and complicated.

8.4.5. Planning and Control

Planning is based on information about the performance of a water supply system. Indices like production-, consumption-, billing- and revenue collection-efficiency or system compiled cost, are necessary tools to control the use of chemicals, calculate a cost covering tariff or determine the right transport requirements or staffing levels. As reported information from the water supply systems lack the correct information or if availed, are not translated into an efficient Management Information System, the question arises as to: Which are the tools, that the Head Quarter plans with?

While the A.I.E. process and involved procedures are lengthy and complicated, the accounting for the money spent, is done by the District Administration to Treasury. The MENR receives only the printed information, against which votes the expenditure has been booked. The question is, whether GOK procurement procedures have been complied with, but not whether the three or five quotations obtained reflected a realistic market price, hence the whole system is more procedure than financial control.

8.5. PROVINCIAL WATER OFFICE FUNCTIONALITY

The functionality of the provincial water offices could not be clearly established. However, the schedule of duties for the Provincial Water Officer is giving the following duties and responsibilities:

- Development, maintenance, control and supervision of all Ministry's operations in the Province
- Any other duties as may be assigned.

Meetings with the district water officers, receiving donors and delegations and general co-ordination, were the comments received. While all technical and

financial returns are as well copied to the Provincial Office, reminders on performance and targets do originate from the MENR Head Quarter. It therefore remains to be explored further, what role the Provincial Office plays in the context of management support, control and/or assistance, when compared with the schedule of duties? Is the Provincial Office an information and control filter for the mass of operational and financial details that are sent to the Headquarter? Is the Provincial Office used as an information dissemination medium? How is the infrastructure, which is in place at the Provincial Office, utilised?

8.6. NWC&PC SHORTCOMINGS AND IMPEDIMENTS

NWC&PC has already a partly de-centralised reporting system, as the Regional Manager only reports filtered information to Nairobi. Decision making remains however an equally lengthy procedure (experienced as well, where commercialisation is involved). AS NWC&PC has to comply with the normal GOK procurement procedures, only slightly modified, problems are of similar nature.

8.7. COMMERCIALISED SYSTEMS IN KENYA

The number of commercialised systems, evolving from former Government operated systems, is limited. Malindi, Nyeri and Kitale were chosen. All systems visited and analysed are currently operated under an agency agreement. The difference in their structure is, that the agent in Malindi is a privately owned company, while the other two companies of Nyeri and Kitale are wholly owned by the former operator, with a Board of Directors representing the stakeholders of the water and sanitation system. Assets remained in all three cases with the former operator of the system.

8.7.1. Malindi: Management Contract (NWC&PC)

The Malindi Management Contract is actually an agency agreement between the National Water Conservation and Pipeline Corporation and H.P. Gauff in association with Gauff Utility Services Kenya Ltd. The Amendment to the State Corporation Act under which NWC&PC has been incorporated, gives NWC&PC the formal mandate to enter into agency agreements, which are accepted by the Attorney General.

The agreement was signed in March 2000, covering a period of 4.5 years.

The company is given autonomy for the day to day operation and related decision making. The overall regulations guiding the NWC&PC do however relate as well to the agency agreement. This means that Government procurement regulations and procedures or writing off debt procedures have to be observed and complied with by the agent as well.

Appendix K 3-Q 8.6.1. reflects the interview with the representative(s) of the agent. While the Malindi agency agreement built on an earlier pilot project, where consumer account aspects, billing and revenue collection, Meter reading and O&M aspects had already been systematically taken up in the past, the new agency agreement took off with the experience gained before. The major task is to get procedures and schedules refreshed and close the information gap that was caused by a delay of almost two years between the old project and the new agreement.

As the project was only in operation for a period of 8 months by the time of the visit, comments on the self-sustainability could not be obtained yet. The initial setting up time required must be considered and self-sustainability should be looked at, at a later point in time.

8.7.2. Nyeri: NYEWASCO Private Water Company

Nyeri Water Company, NYEWASCO, operates under an agency agreement which was signed on 19th March, 1999 and amended on 7th April, 2000. The duration of the agency agreement is 20 years. The agreement is between the Municipal Council of Nyeri and the company.

A Core Management Team is in place and all other staff members were taken over. However it was said that the individual staff performance determines whether they will stay with the company. Salary increments of 15% and 7.5% have been effected since the operation started. An incentive scheme for the staff is being worked on.

Appendix K 3 – Q 8.6.2. reflects the interview with the Managing Director of NYEWASCO.

8.7.3. Kitale: KIWACO Private Water Company

The Kitale Water Company operates under an agency agreement drafted, but not yet finalised or signed. The agreement is between KIWACO, the new company and the Municipal Council of Kitale.

A new Core Management Team (CMT) has been recruited and is supported by a Financial Advisor, seconded by CIM (Centre for International Migration). All other staff members were taken over from the Council Water Department, pending finalisation of the agency agreement.

Day to day operation has been transferred to the agent at the beginning of the year 2000, while numerous financial issues have not yet been sorted out with the former operator and creditors of the former operator. Much of the manager's time is therefore spent on issues relating to the past and negotiation concerning the agency agreement. The day to day operation is independent.

Appendix K 3 – Q8.6.3. reflects the interview with the CMT and the Financial Advisor.

8.8. PROBLEMS AND SHORTCOMINGS OF EXISTING COMMERCIALISED SYSTEMS

The problems or impediments experienced in Malindi and adversely affecting the efficiency, can be summarised as follows:

- The line of command is too long and decision making processes take too much time and additional effort

- Government procurement procedures

The problems or impediments experienced in Nyeri seem very limited and reduced to staff related issues. All former problems, concerning interference of some Councillors with the Board, seem no longer applicable.

- Audited Accounts from the Council to start with the Opening Balance of the company are not yet available
- Not clear how consumer balances absorbed? (audited or not)
- Not clear how old creditors to be absorbed (audited or not)

The problems and impediments experienced in Kitale and adversely affecting the current operation of the company, can be summarised as follows:

- The agency agreement should be signed prior to the commencement of the new company
- Liabilities taken over from the previous operator should be reconciled and audited, to enable the company to start of with a clear picture of the Opening Balance situation
- Financial start up help should be available
- Amount or mode of lease for the assets not yet finalised
- Loan balance of assets not yet clear with the council
- Production affected, due to power on cut off, not for current but old KP&LC debt, carried forward
- Staff issues (transfer, provident fund etc) not finalised as agency agreement still pending

8.9. OPTIONS FOR VIABLE MANAGEMENT AND OPERATION

The approach for recommended changes has focussed on the intention to offer viable approaches that can be implemented within the shortest possible timeframe. Achievements should be possible, while more substantial changes touching on the institutional and legal framework are discussed, formalised or registered.

The various degrees of implementation carry the risk that other players involved in the changes do not agree to the recommended changes. To avoid this major risk, which has been experienced in the Kenyan environment, especially in the Water Sector, a gradual approach is recommended.

While the registration of a private company, Water User Association, Trust or Trust Corporation can be done within a few months, it is seen as a very time consuming and involving exercise, to prepare a detailed network condition plan, existing asset and liability information and clarify the position on the consumer accounts. The assessment, training, selection and repeat training of existing staff into a commercial environment requires "change management" in order to build capacity.

The problems caused by not having reconciled or audited data ready, when registering the "commercial" institution, can be learned from the commercialised

systems currently already in operation. The preparation of these details can fall into the operation of the "commercial" institution, provided the mode of establishing and confirming the figures has been agreed upon, prior to commencement of the 'commercial' operation.

Recommended changes have been worked out in Appendix K3 – ST 8.3 and are used as the basis for further analysis, leading to the phased options, reflected in the Action Plan. Refer to Appendix K3 – ST 8.4

8.9.1. Recommended Changes within the current Institutional Framework

Recommended changes for Phase I of the Action Plan are those changes that can be implemented immediately, with the assistance of a consultant and jointly with the client MENR. All recommended changes are vested within the powers of the client.

8.9.2. Recommended Changes for a De-centralised Framework

The analysis of the current situation reflects that the centralised system under which all water systems are managed and operated, accounts for many of the impediments listed. Phase II of the Action Plan indicates, which steps are recommended to be taken.

The decentralisation approach is as well seen as a step-by-step movement towards bringing the systems closer to the communities, pending a gradual approach towards Private Sector Participation. No lead model has been confirmed yet and a countrywide move can only be implemented by a gradual approach, as capacity building will be a lengthy process and not just a decision or declaration.

8.9.3. Recommended Changes for a Transition Approach

It is expected that recommended changes of Phase I will lead into and continue during Phase II and III. Any changes recommended under the institutional framework management, can build on the grass root work that has commenced with the preparatory measures of Phase I, as they are seen as a requirement for any kind of improvement or change towards a commercialised operation.

8.10. RECOMMENDED UTILITY MANAGEMENT PLAN

No.	Action	Narok	Meru	Muranga	Kabarnet	Makindu	Wundanyi	Migori	Lamu	Webuye	Mumias	Utility Management Plan
1.	Arrange for decent office space							x		x	x	
2.	Set up organisation charts with detailed job description and skill requirements.	x	x	x	x	x	x	x	x	x	x	
3.	Arrange for intensive management training for Engineers or recruit well-qualified managers.	x	x	x	x	x	x	x	x	x	x	
4.	Arrange for commercial and technical staff training	x	x	x	x	x	x	x	x	x	x	
5.	Set up positive and negative staff sanctioning system.	x	x	x	x	x	x	x	x	x	x	
6.	Limit recruitment to the system requirement, based on skill and merit.	x	x	x	x	x	x	x	x	x	x	
7.	Prepare criteria for transport requirements based on size of system coverage, pipe network, number of consumer e.t.c.	x	x	x	x	x	x	x	x	x	x	
8.	Redesign consumer recording and reporting formats	x	x	x	x	x	x	x	x	x	x	
9.	Computerise consumer data base and consider billing software	x	x	x		x	x	x	x	x	x	
10.	Obtain field information from all existing consumer using the re-designed application format	x	x	x	x	x	x	x	x	x	x	
11.	Prepare implementation guidelines related to gazette notices and relating procedures	x	x	x	x	x	x	x	x	x	x	
12.	Prepare consumer and connection management guidelines	x	x	x	x	x	x	x	x	x	x	
13.	Design consumer / connection – management guidelines	x	x	x	x	x	x	x	x	x	x	
14.	Design meter reading / servicing / disconnection schedules and guidelines.	x	x	x	x	x	x	x	x	x	x	
15.	Undertake analysis to substantiate and confirm old debts	x	x	x	x	x	x	x	x	x	x	
16.	Propose write off procedure for old debtors	x	x	x	x	x	x	x	x	x	x	
17.	Recommend commercial charges and penalties	x	x	x	x	x	x	x	x	x	x	
18.	Create staff, consumer and stake holder awareness on cost of production and distribution of water	x	x	x	x	x	x	x	x	x	x	
19.	Outsource the servicing for master meters and condition future supply / tenders to procurement with service backup	x	x	x	x	x	x	x	x	x	x	

8.10. RECOMMENDED UTILITY MANAGEMENT PLAN

No.	Action	Narok	Meru	Muranga	Kakamega	Makindu	Wundanyi	Migori	Lamu	Wajir	Mombasa	Utility Management Plan
1	Arrange for decent office space											
2	Set up organisation charts with detailed job description and skill requirements	X	X	X	X	X	X	X	X	X	X	X
3	Arrange for intensive management training for Engineers or recruit well qualified managers	X	X	X	X	X	X	X	X	X	X	X
4	Arrange for commercial and technical staff training	X	X	X	X	X	X	X	X	X	X	X
5	Set up positive and negative staff sanctioning system	X	X	X	X	X	X	X	X	X	X	X
6	Limit recruitment to the system requirement based on skill and merit	X	X	X	X	X	X	X	X	X	X	X
7	Prepare criteria for transport requirements based on size of system coverage, pipe network, number of consumer, etc.	X	X	X	X	X	X	X	X	X	X	X
8	Redesign consumer recording and reporting formats	X	X	X	X	X	X	X	X	X	X	X
9	Computerise consumer data base and consider billing software	X	X	X	X	X	X	X	X	X	X	X
10	Obtain field information from all existing consumer using the re-designed application format	X	X	X	X	X	X	X	X	X	X	X
11	Prepare implementation guidelines related to gazette notices and relating procedures	X	X	X	X	X	X	X	X	X	X	X
12	Prepare consumer and connection management guidelines	X	X	X	X	X	X	X	X	X	X	X
13	Design consumer connection management guidelines	X	X	X	X	X	X	X	X	X	X	X
14	Design meter reading servicing, disconnection schedules and guidelines	X	X	X	X	X	X	X	X	X	X	X
15	Undertake analysis to substantiate and confirm old debts	X	X	X	X	X	X	X	X	X	X	X
16	Propose write off procedure for old debtors	X	X	X	X	X	X	X	X	X	X	X
17	Recommend commercial charges and penalties	X	X	X	X	X	X	X	X	X	X	X
18	Create staff, consumer and stake holder awareness on cost of production and distribution of water	X	X	X	X	X	X	X	X	X	X	X
19	Outsource the servicing for master meters and condition future supply / tenders to procurement with service backup	X	X	X	X	X	X	X	X	X	X	X

No.	Action	Narok	Meru	Muranga	Kabarnet	Makindu	Wundanyi	Migori	Lamu	Webuye	Mumias	Utility Management Plan
20.	Decentralise AIE funding and procurement procedures to system level and transfer efficient and stringent control to the provincial / regional office level	x	x	x	x	x	x	x	x	x	x	
21.	Decentralise decision making process to station level	x	x	x	x	x	x	x	x	x	x	
22.	Decentralise planning and control of cost	x	x	x	x	x	x	x	x	x	x	
23.	Design efficient and stringent control system for the provincial / regional office level (Price analyst, independent external auditors, adequate use of chemicals)	x	x	x	x	x	x	x	x	x	x	
24.	Design MIS reporting system for Povincial to HQ reporting (investment planning, policy making)	x	x	x	x	x	x	x	x	x	x	
25.	Set up stock management system and controls	x	x	x	x	x	x	x	x	x	x	
26.	Set up consumer meter workshop (with volumetric test facilities)	x	x	x	x	x	x	x	x	x	x	
27.	Prepare / update O&M guidelines / manuals	x	x	x	x	x	x	x	x	x	x	
28.	Propose outsourcing criterias for pump maintenance depending on the pump capacity.											
29.	Include consumer lines into the planned network	x	x	x	x	x	x	x	x	x	x	
30.	Clarify and document water wayleafs	x	x	x	x	x	x	x	x	x	x	
31.	Introduce retainer security on contracted civil works and quality control	x	x	x	x	x	x	x	x	x	x	

No.	Action	Narok	Meru	Muranga	Kakamega	Malindi	Wundanyi	Migori	Lamu	Webuye	Mumias	Utility Management Plan
20	Decentralise the planning and management responsibilities to sub-counties and transfer efficient and stringent control to the provincial/regional office level	X	X	X	X	X	X	X	X	X	X	X
21	Decentralise decision making process to station level	X	X	X	X	X	X	X	X	X	X	X
22	Decentralise planning and control of cost	X	X	X	X	X	X	X	X	X	X	X
23	Design efficient and stringent control system for the provincial/regional office level (Price analyst, independent external auditors, adequate use of chemicals)	X	X	X	X	X	X	X	X	X	X	X
24	Design MIS reporting system for Poyman to HQ reporting (environment planning, policy making)	X	X	X	X	X	X	X	X	X	X	X
25	Set up stock management system and registers	X	X	X	X	X	X	X	X	X	X	X
26	Set up consumer meter workshop (with volumetric test facilities)	X	X	X	X	X	X	X	X	X	X	X
27	Prepare / update O&M guidelines / manuals	X	X	X	X	X	X	X	X	X	X	X
28	Propose outsourcing criteria for pump maintenance depending on the pump capacity											X
29	Include consumer lines into the planned network	X	X	X	X	X	X	X	X	X	X	X
30	Quality and quantity of water delivered	X	X	X	X	X	X	X	X	X	X	X
31	Introduce retainer security on contracted civil works and quality control	X	X	X	X	X	X	X	X	X	X	X

8.11. RECOMMENDED PRIORITY PROJECTS

The final choice of priority projects is recommended to be made during or as a result of the stakeholders workshop. The utility indices and figures compiled in Annex K3 – ST8.2. allow however to draw conclusions and give a basis for good comparison. There are a number of criteria offered as a selection criteria, like:

- Which town promises the fastest results?
- In which town are the highest savings expected?
- Where is the intervention most urgently needed?
- Billing and Revenue Collection Efficiency highest or lowest? or
- Which town has shown the highest effort under the prevailing circumstances?

8.12. RECOMMENDED PRIORITY MEASURES:

The reduction of Un-accounted for Water (UfW) must be considered as the overall priority measure, necessary for all the systems analysed.

Un-accounted for Water is made up of:

- Physical losses in the transmission and distribution system
- Wrong meter reading and billing, and
- Water theft

For those towns where the calculation showed no UFW, the consultant is of the opinion that the information availed needs further confirmation and more detailed field investigation, because such a situation is unrealistic.

To reduce the said water losses it is therefore recommended to give the following priorities:

- 1) Full rehabilitation of the existing distribution system, including standardised meter connections,**
- 2) Replacement or repair of all faulty consumer meters,**
- 3) Setting up of a consumer data base and a reliable billing program, and**
- 4) Management- and Staff Training for the relevant staff members**

9. INSTITUTIONAL AND LEGAL ASPECTS OF KABARNET URBAN WATER SUPPLY SERVICE

9.1 Institutional Set-Up of Kabarnet Urban Water Supply Service.

Kabarnet urban water supply is under the responsibility of the National Water Conservation and Pipeline Corporation. The total supply is 1,100 cu meters per day from six sources: four bore holes; a small dam and the Kilandish dam. The latter supplies 700 cu meters into the system. It was completed in 1991 under Phase I of the Italian Government funded project. Phase II is expected to expand the infrastructure network and to construct a sewerage system. The 1986 master plan that envisaged the two phases is out of date and requires a review. The current population of Kabarnet is estimated at 25,000, of which 11,000 are currently served with water.

The National water Conservation and Pipeline Corporation set-up for Kabarnet urban water supply includes:

- (a) Area Manager (in place)
- (b) Deputy Area Manager (vacant)
- (c) Technical operators under the Deputy Area Manager
- (d) Accounts

The Area Manager is responsible for administration duties. He reports to the Regional Manager at Nakuru. The total staff complement is 29, of which 25 are in operations (majority are meter readers and have patrollers).

The Municipal Council is a consumer of water. It manages the sanitation system, which includes exhausting the septic tanks in the town. The exhauster is borrowed from Eldoret. The projected construction of lagoons and a sewerage system has not materialized.

Although the Municipal Council is interested in the management of the water supply system, it has no capacity for this purpose. Neither has the council evaluated the feasibility of undertaking this responsibility.

9.2 Existing Institutional Framework for The Water Sector

9.2.1 Organisations Concerned with Water Supply

Water is principally now being managed under the Ministry of Environment and Natural Resources. However, there are specific institutions responsible for the development, operation and maintenance, and regulation of water supply. These institutions are analyzed below.

(a) Department of Water Development

The Department of Water Development (WDD) is the GOK agency responsible for the development, conservation and control of water. In support of this, its mission statement is: "to ensure proper and orderly Water Resources Management, including assessment, conservation, development and protection of the environment from degradation from water development activities." In order to fulfill its mission, the functions of the department are stated as:

- Water development and water supply;
- Control of water catchments;
- Water resource management;
- Water quality and pollution control;
- Water conservation.

To execute these functions, the Director of Water Development is responsible for three branches, which together are responsible for ten Divisions, one additional Division, the Kenya Water Institute (KEWI), six provincial water offices and, through the provincial offices, 64 district offices throughout Kenya. WDD operates a total of 375 (309 rural)³ schemes through its network of Provincial, district and Divisional offices.

The Department of Water Development manages ground and surface water resources by hydrological observation, assessing water resources, controlling water quality, planning water projects, assessing environmental and other impact of water resource management practices. There are 500 observation stations around the country providing data for this unit. The branch also manages a division for water rights ad assessment, which issues, cancels and registers water permits and maintains water resources database.

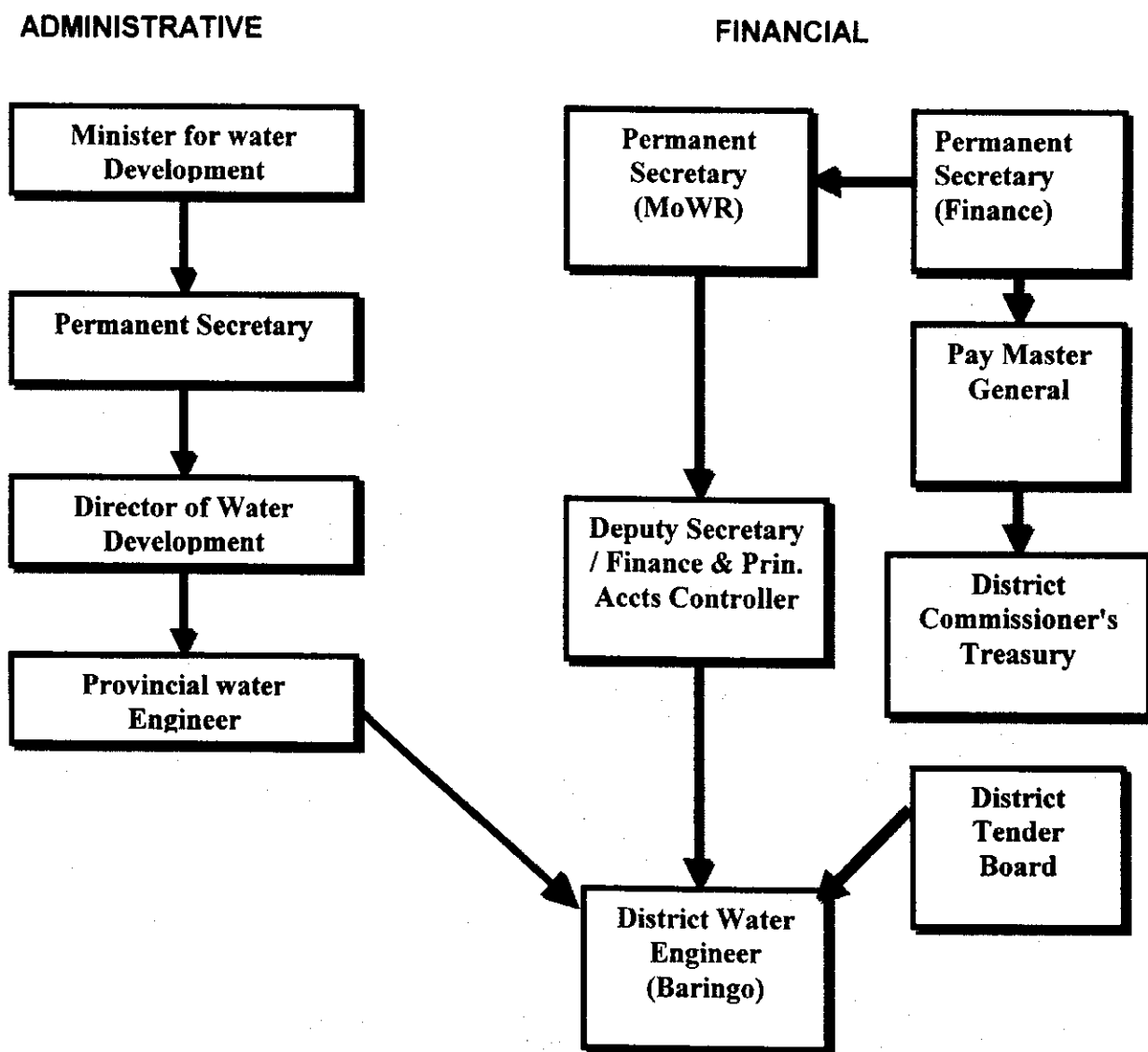
The four branches of the department are:

- Water resource development
- Water resource management
- Water research
- Kenya Water Institute

(b) Water Operations at District and Scheme Level

In Districts and scheme level, management is vested on the District Water Engineer. The District Water Engineer is also Secretary to the District Water Board and executes decisions as required by the DDC.

Chart 1: Management Structure for Water and Sewerage Services - Water Undertaker: Director of Water Development



9.2.2 Agencies Related to the Ministry of Environment and Natural Resources

There are various agencies operating in support of the mission of the Department of Water Development. These include:

(a) Water Appointment Board (WAB)

WAB reports to the Minister of Water. It, on behalf of the Minister, authorises, supervises and controls the use of water throughout Kenya. The function is discharged through Catchment Boards. There are six catchment Boards as follows: Tana, Rift Valley, Athi, Northern Ewaso Nyiro, Lake Victoria North, and Lake Victoria South.

schemes and a registration procedure should be mandatory.

In addition to the above, there are schemes operated by small informal groups which often collapse without financial or technical assistance. Those that do not fail are better managed, either with or without external help from, say, MENR field staff, with realistic fund raising arrangements. The Ministry of Culture and Social Services attempts to mobilise and assist groups like these, but is hampered by lack of funds and manpower in the field.

9.3 Legal Framework of The Water Sector

An appropriate legal and regulatory framework is necessary to monitor and control the water sector. The main objectives of the regulatory system are to: ensure compliance with standards of acceptable service, protect the ratepayer and create an environment that promotes stable and viable water institutions. The Kenyan Government has enacted laws related to water supply and sewage disposal including environmental legislation. The main laws include:

- (a) The Water Act (Cap 372)
- (b) The National Water Conservation and Pipeline Corporation Order (Legal Notice No.270, June 24, 1988)
- (c) The Local Government Act (Cap 265)
- (d) The Irrigation Act
- (e) The Tana and Athi Rivers Development Authority Act
- (f) The Keno Valley Development Authority Act and The Lake Basin Development Authority Act
- (g) The Agriculture Act (Cap 318)
- (h) The Public Health Act (Cap 242)
- (i) The Environmental Management and Co-ordination Act of 1999.
- (j) Wildlife (Conservation and Management) Act (Cap 376)

These laws are briefly described and assessed where relevant to the water sector.

9.3.1 The Water Act (Cap 372)

The Water Act, which is the most important law related to water, was first established in 1951 to make better provision for the conservation, control, apportionment and use of water resources. It was revised in 1972 and further subsidiary legislation was enacted in 1995.

(a) The objective of the Water Act

The purpose of the Water Act is to make provision for the conservation, control, apportionment and use of the water resources of Kenya, and for purposes incidental thereto and connected therewith. Except for waters which are wholly situated in a private land owner's domain, the Act vests the rights over all surface and ground water in the Government subject only to the rights which users may acquire under licence.¹ The overall power for the control of every body of water is exercised by the Minister,² who has the duty to promote the investigation, conservation and proper use of water resources of Kenya.³ Part III of the Act provides for the general powers of the Minister. He has power to purchase or acquire land by any other means for the conservation, improvement or use of water,⁴ to construct and maintain such works as may be necessary for the protection of the source or course of any body of water, the disposal or control of flood water, the conservation of water, and the distribution, apportionment or measurement of water;⁵ to impose water rates upon any person benefiting by such works;⁶ to impose water rates in connection with community water projects;⁷ to impose water rates on local authorities with respect to water projects in reserved areas;⁸ to order drainage of swamps;⁹ to establish protected catchment areas in cases where special measures are necessary for the protection of water resources;¹⁰ to expropriate, on payment of compensation, and operate or dispose of water works;¹¹ to enter upon, use, order the use of, maintain, vary, destroy or remove abandoned water works wherever situated;¹² and, in cases of emergency as a result of a serious deficiency of water for domestic purposes caused by reason of exceptional shortage of rain, accident, or other unforeseen circumstances, to direct that any person who has excess water supply for his domestic purposes does supply to such area or other person the excess quantity.¹³

(b) Institutions under the Water Act

The Act then establishes two important institutions. The first is the Water Resources Authority, established under section 19, with the duties, *inter alia*, to investigate the water resources of the country and advise and make recommendations on the

¹ Supra, note 24, section 3.

² Ibid., section 4.

³ Ibid., section 7.

⁴ Ibid., section 8.

⁵ Ibid., section 9.

⁶ Ibid., section 10.

⁷ Ibid., section 11.

⁸ Ibid., section 12.

⁹ Ibid., section 13.

¹⁰ Ibid., section 14.

¹¹ Ibid., section 15.

¹² Ibid., section 16.

¹³ Ibid., section 17.

improvement, preservation, conservation, utilization and apportionment, to prepare estimates of the future water supply requirements of any area of the country, and to formulate proposals for meeting the existing and future water supply requirements of any area.¹⁴ The second is the Water Apportionment Board established under section 25, with the duty, to grant permits for proposed diversion, abstraction, obstruction, storage or use of water from a body of water or drainage of a swamp,¹⁵ and powers to prescribe measuring and controlling devices for water consumption,¹⁶ to require equitable use and to prohibit any practice that may cause undue reduction of water during drought and in the case of small watercourses,¹⁷ to determine all questions as to full, efficient, reasonable and beneficial utilization of water,¹⁸ and to declare various matters pertaining to bodies of water.¹⁹ Overall, the Water Apportionment Board works in an advisory capacity to the Minister and determines the apportionment of national waters according to user requests.

(c) Powers of the Minister under the Act

The Act then empowers the Minister to take a number of steps to ensure the protection of water catchment areas and ground water resources. He may declare an area to be a protected catchment area, a conservation area, or a protected area. Where the Minister is satisfied, after consultation with or on the advice of the Water Resources Authority, that special measures are necessary for the protection of water resources in or derived from any area, he may declare such area or any part thereof to be a protected catchment area.²⁰ By order, the Minister may require, regulate or prohibit any activities within such a protected catchment area which may be contrary to the requisite protection goals. Any person who fails to comply with such order shall be guilty of an offence.²¹ Under section 74 of the Act, the Minister has power to declare, after consultation with the Water Resources Authority, an area to be a conservation area if special measures for the conservation of ground water in the public interest whether for the protection of public water supplies or for the protection of water supplies used for industrial or other purposes are required. Any person who has been using ground water in an area so declared to be a conservation area and who desires to continue with the use must, within six months of the Minister's declaration, obtain a permit.²² Besides, no person may construct and use any well for the abstraction of ground water, extend any existing well for the abstraction of additional ground water, or abstract ground water by mechanical means from any well, within a conservation area without a permit.²³ Where the Minister has appointed an undertaker to be responsible for the control and distribution of water in a given area,²⁴ there is a corresponding duty to ensure an adequate supply. Accordingly,

¹⁴ *Ibid.* section 20.

¹⁵ *Ibid.* sections 36, 78, & 79.

¹⁶ *Ibid.* section 28.

¹⁷ *Ibid.* section 29.

¹⁸ *Ibid.* section 30.

¹⁹ *Ibid.* section 31.

²⁰ *Ibid.* section 14.

²¹ *Ibid.*

²² *Ibid.* section 75.

²³ *Ibid.*, section 76.

²⁴ That is, under section 124 of the Act.

whenever the Minister is satisfied that special measures are necessary for the protection of a catchment area from which the water supply of an undertaker is obtained, he may declare such area to be a protected area.²⁵ By order, he may require, regulate or prohibit the carrying out of any activities in the area that may be inimical to the protection of the area or the water supply obtained therefrom. Such an order must be published in the Gazette and in a newspaper circulating in the district where the area is situated.²⁶

(d) Pollution control

The Water Act also addresses the issue of pollution of water resources, albeit in the part of the statute addressing miscellaneous issues.²⁷ One may be tempted to conclude that pollution, and the quality of water generally, is not given the priority that it deserves in the statute. There is comparatively more emphasis on ensuring that there is no diminution in the quantity and not quality of supplies. However, pollution of water used for human consumption is an offence under the Act.²⁸ The perpetrator of the pollution shall not be so liable if he was practising a lawful method of cultivation of land or the watering of stock which does not conflict with the principles of good husbandry.²⁹ Similarly, it is not an offence if the perpetrator is involved in reasonable use of oil, tar, or other substances on any highway or road and reasonable steps are taken to prevent pollution. Finally, the pollution does not constitute an offence where the perpetrator was involved in the disposal of wastes or effluent in any area that the Minister may have specified.³⁰

In any event, it is an offence for any person to wilfully and without authority throw, convey, or cause or permit to be thrown or conveyed, any rubbish, dirt, refuse, effluent, trade waste or other offensive or unwholesome matter or thing into or near any body of water in such manner as to cause, or be likely to cause, pollution.³¹ Besides, under Rule 72 of the Water (General) Rules³², any person the effluent from whose works is returned to or discharged into a body of water not being "in such a degree of purity as will satisfy" the Water Apportionment Board or containing any matter "poisonous or otherwise likely to be injurious directly or indirectly to public health, to livestock or to crops, or to orchards or gardens irrigated with such water, or to any product for which such water is used in any process whatsoever," shall be guilty of an offence. Absent water quality and discharge standards as well as a monitoring mechanism, these provisions have remained inoperable, although well-intentioned!

A further attempt to amend the Act is now in progress led by the Water Rights Section of the MOWR. It is intended that a second Water (Amendment) Bill be

²⁵ Section 150(1)

²⁶ Section 150(2).

²⁷ Part XVI of the Act.

²⁸ *Ibid.*, section 158(1).

²⁹ *Ibid.*

³⁰ *Ibid.*

³¹ *Ibid.*, section 160(2)(b).

³² *Ibid.*, L.N. 374 of 1964. See also Rules 77-80.

prepared, circulated to stakeholders and the Attorney General, and then submitted to Parliament.

9.3.2. The National Water Conservation and Pipeline Corporation Order, 1988

The National Water Conservation and Pipeline Corporation was established in 1988 by an Order,³³ and among its functions are the development and management of the water projects listed in the Schedule to the Order, as amended from time to time.³⁴ To that end, and in connection with the water projects in the Schedule, Regulation 5 provides that the Corporation shall (a) supply water in bulk to such water undertakers as may be designated by the Minister, (b) supply water, in bulk or otherwise, to such persons or class of persons as the Minister may designate, (c) do all such things as may be necessary or advantageous for the management and development of water projects and for securing an adequate supply of water, and (d) apply for and obtain such licences, permits and authorities required under any written law or as may be desirable. Further, the Regulation provides that the Corporation shall operate under the general direction of the Minister and shall assist the government in the formulation and implementation of a national water development policy.

It is noteworthy that the functions of the Corporation do not include addressing or dealing with factors or activities that may affect the availability of water or its quality. The supply with which the Corporation is concerned is dependent on the availability which, in turn, is dependent on conservation of catchment areas and drainage basins and ensuring that activities in these areas do not lead to diminution of the water in quantity and quality. The implication here is that the Corporation would be rendered functus officio if the supplies dried out!

A major weakness in the legislation establishing the Corporation is the absence of any statement indicating how it is to relate to other institutions, eg MOWR and local authorities, in the development and management of water supplies. This has caused considerable confusion among these other institutions and needs to be resolved.

9.3.3 The Local Government Act (Cap 265)

This Act was set up in 1963 to provide for the establishment of authorities for local government, to define their functions and to provide for "connected" and "incidental" matters. It was revised in 1986.

In the context of this study, the Act provides that every local authority (municipal,

³³ Supra, note 37.

³⁴ As per the last amendment to the Schedule, effected vide L.N. 42 of 1989, the total number of water projects under the Corporation is now forty two.

town and urban council) may establish, maintain and regulate sewerage and drainage works within or outside its area. It may also compel the construction of private drains and their connection to public drains or sewers, and fix charges for the use of sewerage and drainage facilities.

In addition, a local authority (municipal, town, urban or area council) may undertake the supply of water within its area, and may establish, acquire and maintain works for this purpose. A local authority may make by-laws under this Act to the extent that a water undertaker may make regulations under the Water Act. However, it is not stated clearly that every local authority undertaking water supply is a water undertaker under the Water Act. For example, the Water (Water Undertakers) Rules apply only to gazetted water undertakers.

Many local authorities operate and manage water supply systems, not only as water undertakers but also pursuant to the provisions of the Local Government Act.³⁵ The water and sewerage department of every local authority is responsible for operation and maintenance of works for the supply systems. Augmentation and expansion of the systems are under the control of the parent ministry.

9.3.4 The Irrigation Act

Section 15(2)(a) of the Irrigation Act (Cap. 347) enjoins the Irrigation Board, in conjunction with the water Resource Authority, to formulate and be responsible for the execution of policy in relation to national irrigation schemes. One can only hope that such policy would take into account and be in consonance with the provisions of the Water Act.

This Act provides for the establishment, constitution and functions of the National Irrigation Board which is responsible for the development, control and improvement of national irrigation schemes in the areas designated by the Minister of Water Resources.

9.3.5 The Tana and Athi Rivers Development Authority Act

The Act provides for the establishment of an authority to advise on the institution and coordination of development projects in the two basins.

9.3.6 The Kerio Valley Development Authority Act and the Lake Basin Development Authority Act

These Acts each provide for the establishment of an Authority to:

- (a) Plan and coordinate the implementation of development projects in the catchment area;

³⁵ Chapter 65, Laws of Kenya, (Revised Edition, 1986), sections 178-180.

- (b) Establish a long range development plan for the area;
- (c) Coordinate the abstraction and use of natural resources, especially water, and to monitor this;
- (d) Maintain a database of all relevant statistics for the area.

The Acts do not state that the Authorities have sole or any responsibility for developing and distributing water supplies in bulk, either within the Area or outside it.

9.3.7 The Agriculture Act (Cap 318)

Section 201 of the Agriculture Act acknowledges the supremacy of the Water Act. It states -

“Nothing in this Act or any rules made thereunder shall prejudice or affect the provisions of the Water Act, and where anything in this Act or any rule is inconsistent with any such provision that provision shall prevail.” This provision should be included under other Acts as far as water is concerned.

The Act promotes agricultural development according to sound practices of good land management and stresses the need for conservation of soil and its fertility. Thereby, the Act indirectly emphasises the importance of preventing of soil erosion and the consequential deterioration of the quality of surface water.

9.3.8 The Public Health Act (Cap 242)

This Act requires local authorities to take all lawful measures to prevent and deal with the outbreak of disease. As there is a direct connection between certain diseases, sewage and water supply, every local authority, whether a water undertaker or not, has a statutory duty in water supply, water pollution and sewage disposal. For this purpose, the Act gives every local authority wide powers to deal with unsatisfactory water supplies, wastewater and sewage disposal and water pollution. For example, a local authority is mandated to prevent pollution of any supply of water used for drinking or domestic purposes, to purify it should it become polluted and to take action against those causing the pollution. Furthermore, the local authority is empowered to exercise its powers outside its area, if for example the source of water is outside its area.

Powers given to the Minister include: delegation of powers to local authorities and others to control the standard of purity of treated effluent and to control industries liable to pollute water courses; making rules for the protection of water supplies in defined areas; prohibition of insanitary irrigation within a town or its environs. There is a fair amount of subsidiary legislation which includes detailed provisions for drainage

and sewerage.

9.3.9 The Environmental Management and Co-ordination Act 1999

Management of water resources has also been addressed by legislation outside the sectoral confines. In particular, this has been addressed under the rubric of environmental protection and conservation by the newly enacted Environmental Management and Co-ordination Act.³⁶ The Act has detailed provisions on this matter. For instance, section 42 provides that no person shall, without the written approval of the Director General of the National Environment Management Authority, given after an environmental impact assessment in relation to a river, lake or wetland carry out a number of activities, namely, (i) erect, reconstruct, place, alter, extend, remove or demolish any structure or part of any structure in or under the river, lake or wetland; (ii) excavate, drill, tunnel or disturb the river, lake or wetland; (iii) introduce any, animal whether alien or indigenous, dead or alive, in any river, lake or wetland; (iv) introduce or plant any part of a plant specimen, whether alien or indigenous, dead or alive, in any river, lake or wetland; (v) deposit any substance in a lake, river or wetland or in, on, or under its bed if that substance would or is likely to have adverse environmental effects on such water body; (vi) direct or block any river, lake or wetland from its natural and normal course; or (vii) drain any lake, river or wetland. Besides, the Minister is empowered to declare a lake shore, wetland, coastal zone or river bank to be a protected area for purposes of conserving the environmental quality of such a body of water.³⁷ He may also issue general and specific orders, regulations or standards for the management of river banks, lake shores, wetlands, or coastal zones and for the protection and conservation of such areas if they face imminent risk of environmental degradation. Such orders may provide for, *inter alia*, the development of overall environmental management plans for the water bodies taking into account the relevant sectoral interests, the development of contingency plans for the prevention and control of all deliberate and accidental discharge of pollutants into the water bodies, as well as the development of plans for the protection of wetlands.³⁸

(a) Management of environment - lakes and rivers

The National Environment Management Authority is also under a duty to issue guidelines for the management of the environment of lakes and rivers.³⁹ It is also required to develop, issue and implement regulations, procedures, guidelines and measures for the sustainable use of hill sides, hilltops, mountain areas and forests and the control of the harvesting of forests and other natural resources so as to protect water catchment areas.⁴⁰

Further, the Minister is empowered to declare any area of land, sea, lake or river to be a protected natural environment area for the purpose of promoting and preserving

³⁶ Act No. 8 of 1999. The Act became operational effective January 14, 2000.

³⁷ *Ibid.* section 42(2).

³⁸ *Ibid.*, section 42(3).

³⁹ *Ibid.*, section 42(4).

⁴⁰ *Ibid.*, sections 44 & 47.

specific ecological processes, natural environment systems, natural beauty or species of indigenous wildlife or the preservation of biological diversity in general. Once an area has been so declared, the National Environment Management Authority is empowered to issue guidelines and prescribe measures for the management and protection of such area.⁴¹

(b) Environmental impact assessment - water projects

Section 58 of the Act makes it mandatory for projects that are likely to have adverse environmental impacts on water to undergo environmental impact assessment. These projects are dams, rivers and water resources including storage dams, barrages and piers; river diversions and water transfer between catchments; flood control schemes; and drilling for the purpose of utilizing ground water resources including geothermal energy.⁴²

What is clear from the above is that the Environmental Management and Co-ordination Act is innovative in one fundamental way. Unlike the other legal instruments before it, it focuses the management strategy less on the resource (water) *per se* and more on the protection and conservation of the ecosystems that enhance and maintain both the quality and quantity of the resource available for use. By focussing more on the ecosystems, the Act adopts a holistic approach to water resource management which, in turn, enables the consideration of related factors such as deforestation, agricultural and animal husbandry and human settlements, all of which have direct implications on the availability and sustainable use of water.

(c) Water quality standards

As already noted above, the major problem with the prevention and control of water pollution is the absence of any water quality and discharge standards. With the Environmental Management and Co-ordination Act in force, this may soon become history. Water polluting activities and pollutants will be subjected to strict control measures under the Act. The Act establishes a Standards and Enforcement Review Committee whose functions are, *inter alia*, to advise the National Environment Management Authority on how to establish criteria and procedures for the measurement of water quality, to recommend to the Authority minimum water quality standards for uses such as drinking, industry, agriculture and recreation, and to analyse and submit to the Director General of the Authority conditions for discharge of effluents into the environment.⁴³ Implementation of the quality standards will be reinforced by penal sanctions, a factor that recognizes societal interest in water quality. Any person who discharges or applies any poison, toxic, noxious or obstructing matter, radioactive waste or other pollutants or permits any person to dump or discharge such matter into the aquatic environment in contravention of the

⁴¹ *Ibid.*, section 54.

⁴² *Ibid.*, section 58 and Second Schedule to the Act.

⁴³ *Ibid.*, sections 70 & 71.

established water pollution control standards shall be guilty of an offence and liable to imprisonment for a term not exceeding two years or to a fine not exceeding one million shillings or to both such imprisonment and fine.⁴⁴ In addition, the person shall be ordered to pay the cost of the removal of the pollutant(s), including the costs of restoration of the damaged environment and, also, to pay third parties reparation, cost of restoration, restitution or compensation as may be determined by the court on application by such third parties.⁴⁵

(d) Trade and industrial effluents

Trade and industrial effluents shall be discharged only into existing sewerage systems and only pursuant to an effluent discharge licence issued by the local authority operating or supervising such sewerage system.⁴⁶ The discharge licence may be cancelled by the Authority if (i) the holder contravenes any provision of the Act, (ii) the holder fails to comply with any condition specified in the licence, or (iii) the Authority considers it in the interest of the environment or in the public interest so to do.⁴⁷ Otherwise all licenses issued for effluent discharge shall be kept in a register to be maintained by the Authority as a public document that may be inspected by any person on payment of the prescribed fee.⁴⁸

An important provision of the Act is section 158 which provides that any written law in force before the commencement of the Act relating to the management of the environment shall have effect subject to such modifications as may be necessary to give effect to the Act. Further, where the provisions of such law conflict with those of the Act, the latter shall prevail. This provision is crucial in charting the future trends in legislative action with respect to the management of the environment generally and water in particular.

9.3.10 Wildlife (Conservation and Management) Act (Cap. 376).

Mention should also be made of the Wildlife (Conservation and Management) Act (Cap. 376). Under S.15 thereof, the Minister is empowered, upon certain conditions being satisfied, to prohibit, restrict or regulate any particular acts in any area adjacent to the Park, National Reserve or local sanctuary. In particular, he may declare an area to be a protection area and may also specify the acts which are prohibited or regulated and the extent or manner of such restriction or regulation. The Minister's action might well encroach upon water allocation and related matters. Should that happen, it would then become necessary to ensure that the Minister's actions are in conformity with the express provisions of the Water Act.

9.4 Concerns with the Current Institutional Framework

⁴⁴ Ibid., section 72.

⁴⁵ Ibid.

⁴⁶ Ibid., sections 74 & 75.

⁴⁷ Ibid., section 76.

⁴⁸ Ibid., section 77.

Past measures and policies have not effectively addressed the problems in the water supply and sanitation sector. The water delivery systems continue being ineffective and inefficient. The main reasons for these are:

- (a) The politics of water - Water has been regarded as a social good. It is therefore part of a political culture that water provision and sanitation is the obligation of the state. Citizens, administrators and politicians regard water utilities as naturally existing to fulfill that social role. Moreover, water utilities are significant employers and instruments of political patronage.
- (b) Uncertainty over the policy regime and regulatory framework has been a major constraint in the water supply and sanitation sector management. It is held that rules which are clear, sound and stable, and institutions which enforce those rules in a fair and predictable manner, are the linchpin to efficient institutions.
- (c) The role of private capital and management in the water supply and sanitation sector and the pricing of services have not been clarified. Lack of detailed information on the sector and its potential as a business is a major reason why entrepreneurial resources have yet to be mobilized on a scale consistent with the potential of the sector.
- (d) There are no performance standards for water utilities in Kenya currently. This means that managers cannot be sanctioned for poor performance. This extends to the fact that there are no effective sanctioning system for wayward and dishonest employees as well.
- (e) The centralized system of managing water utilities particularly those under the MENR and NWCP makes efficient operations difficult.
- (f) Water services are provided by centrally managed monopolistic public enterprises or government departments. Those charged with the responsibility for delivery of water services are rarely given the managerial and financial autonomy they need to do their job properly.
- (g) Users of these services both actual and potential are not well positioned to make their demands felt.

In addition to the above there are specific constraints arising from the administrative and financial over water. These are:

- (h) The Ministry is responsible for all features of water development and management. This includes policy formulation, water sector regulation and is also the main water undertaker. This leads to over centralized decision making processes leading to slowness in project implementation and capacity responsiveness.

- (i) The financial management aspects of water schemes is governed by Treasury Regulations. Revenues, especially for those schemes operated by the Ministry of Water Resources, revert to District Treasuries with little reference to the dynamic needs of the water schemes. This affects operation of water schemes in that there is absence of financial control at the District level. This results in:
 - Lack of attention in even a minor leakage problem as repair financing decisions lies elsewhere.
 - In excess financing charges for the water sector.
 - Lack of accountability and transparent with respect to the finances raised and utilized by the water schemes.
- (j) There exists Parallel authority systems in the implementation of projects, particular at the District and Provincial Water Engineers level.
- (k) The Water Act, which is the operative Act for the water sector does not formally recognize the position of the Permanent Secretary in the management of water resources.
- (l) Water resource management responsibilities are often fragmented among sector agencies and this becomes a major impediment to integrated water resources management.

9.5 Concerns with the Existing Legal Framework

Implementation of the law is generally intended by Government and public authorities. If laws are made for good reasons, there must be equally good reasons for their enforcement. Law which is not implemented because it is not enforced encourages the public to disregard it, and is unfair to those who observe it.

Several studies of the sector spanning two decades have revealed that most problems are due to poor implementation and enforcement of the law, rather than any serious deficiencies in it. It is reported that formal enforcement action is virtually unknown, with scarcely a single prosecution under the relevant laws in the last 35 years. (The Study was unable to verify this absence of prosecutions.) The reasons for this low level of enforcement were:

- (a) The division of responsibilities among many agencies, with little coordination and between which cooperation is not always good. At best this makes for procedural difficulties, and at worst leads to lack of interest.
- (b) The number of laws involved which may be difficult to understand and correlate, particularly by the subordinate officials concerned.

- (c) The demise of the Water Resources Authority and the Regional Water Committees, which, in the absence of amendments to the Water Act, implies that their functions have been taken over unlawfully.
- (d) Lack of experience of enforcement procedures by officials and lack of case law.
- (e) Staff shortages.
- (f) Inability to take Water Act prosecutions to subordinate courts quickly. (The present procedure whereby prosecution of people contravening the Water Act must be initiated by the AG will be quite unworkable if the number of prosecutions increases. This would be better handled by designated officers at a lower level, eg water bailiffs).
- (g) An absence of what can best be described as the "philosophy of enforcement", particularly at senior levels. One might add, from the present perspective:
- (h) Generally poor motivation among officials of the public service because of inadequate pay and service conditions when these are compared to the private sector and even state corporations.

9.6 Proposals for Reform of The Water Sector

The need to improve the management systems of providing water and sanitation services in urban areas in Kenya is now apparent and urgent. The technical and operational; commercial and financial; human and institutional; and environmental problems of the water utilities must be addressed. This requires examining different management arrangements that will deliver the intent. Three approaches are considered for ameliorating the problems of water supply in Kenya. These are:

- (a) Retaining the current water management arrangements but strengthening the operations.**
- (b) Corporatization of water and sanitation services.**
- (c) Allowing private sector participation in water utility management.**

Each of these options requires careful analysis as to its viability and application in the Kenyan context. These options are discussed hereunder:

9.6.1 Retaining Existing Arrangements

The proponents of **Retaining the current water management arrangements but strengthening the operations** maintain that the current urban water undertakership arrangements remain. They argue the problem is not institutional but one of the quality of management. Therefore performance of the water utilities can be enhanced

without changing current institutional arrangements but by adopting appropriate reform programmes which include:

- (a) Strengthening the institutional mechanisms of the Ministries of Water Resources and Local Authorities, the urban centers and the National Water Conservation and Pipeline Corporation.
- (b) Developing institutional mechanisms such as contract plans and performance evaluation systems to hold managers of water utilities accountable for results.
- (c) Recruiting skilled manpower with market based compensation systems for the utilities.
- (d) Increasing the autonomy and freeing water utility managers from government interference in day-to-day operational decision making and from non-commercial goals. This will include granting autonomy to management of the utility to hire and fire, negotiate on tariffs and spend outside civil service rules. It also includes restructuring the board of management to diminish the role of sector ministry and civil servants.
- (e) Allowing gradual move to cost recovery tariffs

9.6.2 Corporatization

Corporatization means the formation of autonomous utilities to take charge of water supply and sanitation. Corporatization implies full application of commercial principles to the water service providers. The utilities will have focused and explicit performance objectives, well-defined budgets based on revenues from users, and managerial and financial autonomy. The managers can then be held accountable for their performance. The advantage is rapid improvement in performance.

The key in Corporatization is the formation of autonomous utilities. This can be done through:

- (a) Transferring the assets of the water utility to public **trust company**, owned directly by the Government or indirectly through a local authority. The assets are therefore separated and isolated from those of the Government or council. This company will be managed by an independent Board of Trustees similar to that envisaged under the Kenya Revenue Authority Act. Since this is a public company owned by the Government, it will have the capacity to source multilateral funds for development purposes.
- (b) Forming an **autonomous operating entity** which will be granted some rights to manage the utility by the public trust company. Corporatization will be achieved where an autonomous operating unit is created and which is then allowed to operate on full commercial principles enjoying commercial freedoms. Corporatization establishes independence of a local authority or government unit and insulates it from noncommercial pressures and constraints. This is because

lack of autonomy and accountability creates problems such as overemployment and unfocused goals occur because managers do not have control over day-by-day operations. They also must refer decisions on prices, wages, employment, and budgets to someone else. It is known that water departments in urban authorities are not autonomous units. Under this phase, mechanisms for the creation of institutional framework which can lead to commercialization would be considered. This will include the role of the main stakeholders in the commercialization process and the internal arrangements required to create autonomous water departments including human resource and finance issues.

9.6.3 Private Sector Participation

Private sector participation (PSP) in water and sanitation is based on the separation of the ownership of assets from the management of those assets. Private sector participation involves changing the managerial characteristics of the water industry. It further calls for the making of a complex set of choices about all the factors influencing water sector performance and creating the conditions under which private involvement can yield the desired performance improvements. Experience from PSP in water and sanitation has helped to:

- (a) improve the quality and availability of services
- (b) expand service coverage
- (c) mobilize capital from both public and private sources for urgently needed investments
- (d) introduce new cost-effective technologies and stimulate the development of superior management and more efficient use of labour
- (e) reduce operating subsidies, and in some cases, transform them into positive returns on investments
- (f) reduce political interference in the operations of water utilities which often contributes to the chronic inefficiency in public utilities⁴⁹

9.7 Proposed Institutional Options and Legal Aspects of Kabarnet Urban Water Supply

The proposed institutional options and legal implications for the institutional improvement and rehabilitation of water supply system for Kabarnet Urban Water Supply are guided by:

- (a) Government policy on water resource management (Sessional Paper No. 1 of 1999) and policy linkages with Poverty Reduction Strategy Paper (PRSP);

⁴⁹ Nakani, P.2

- (b) Government policy on the restructuring and privatisation of public enterprises (1992)
- (c) Grant financing eligibility for institutional strengthening and infrastructure rehabilitation by development partners and, more particularly, the Government of Japan.
- (d) Sustainability of water supply and sanitation services;
- (e) Improved access of water service to community, especially women;
- (f) Cost effective operations balanced by affordability;
- (g) Speed of incorporation in view of current strict deadlines;
- (h) Consistency with existing incorporation laws;
- (i) Community participation and involvement - public orientation as opposed to private sector orientation;
- (j) Substantial autonomy to deliver service without undue political interference.

The options considered and presented hereunder include: State Corporations; Limited Liability Company; societies Act; and the Trustee Act (Perpetual succession) Act, Cap. 164. These options are summarised below. A detailed analysis of these options and their legal implications are presented in Annex 1(Institutional options and Legal aspects of Kabarnet Urban Water Supply and Sewerage Services)

9.7.1 State Corporation

This can be established under the provisions of the State Corporations Act⁵⁰ (Chapter 446). This would be a public institution whose day to day operations would be decided by a Board of Directors in which the Government would have a substantial control. It would satisfy the requirement by the Government that it must retain the ownership of its assets and other investments in the sector. It would also meet the condition for grant financing by the Government of Japan through JICA.

However, in the light of the fact that the stated Government policy is to pull out of the water sector, this is not a recommendable option as it would be contradictory to the government policy. Besides, the National Water Conservation and Pipeline Corporation has not particularly been efficient in the discharge of its mandate in order to justify the establishment of another corporation.

9.7.2 Limited Liability Company

⁵⁰ Chapter 446, Laws of Kenya, (Revised Edition, 1987).

This can be incorporated under the provisions of the Companies Act⁵¹ and may be limited either by shares or by guarantee and be public or private. A company limited by shares may be public in which case its shares may be floated on the stock exchange and any person may become an investor therein by purchase of the shares. The number of shareholders is limited only by the share capital. A private company, on the other hand, has a limited number of shareholders; they cannot be more than fifty. Since the number of shareholders is limited only by the share capital, a public company may cater for the interests of more stakeholders than the private company. But since, in both cases, the profit motive is the driving force in the membership, this may ensure efficiency in the delivery of services.

The company limited by guarantee is a more social service oriented organization that is not motivated by the profit motive. To that extent, the company may promote community participation and involvement in its decision-making process.

The main disadvantage of a limited liability company is likely to be 'taken over' by people with the economic muscle and be used for their own selfish interest with little or no benefits enuring to the community that is supposed to be benefited. More crucial is the fact that the company will not meet the eligibility criterion for funding by the Government of Japan through JICA. Besides, in cases where companies have been incorporated to take over municipal water supplies, there have been several technical and operational problems. This is especially so in cases where the local authorities concerned have incorporated wholly owned limited liability companies where the municipal councillors have brought in political interference. Cases in point include Eldoret and Nakuru Municipal water supplies.

9.7.3 Co-operative Society

A co-operative society can be registered under the provisions of The Co-operative Societies Act⁵². Under the provisions of this Act, a society which has as its object the promotion of the welfare and economic interests of its members, and has incorporated in its by-laws the principles of (a) voluntary and open membership, (b) democratic member control, (c) economic participation by members, (d) autonomy and independence, (e) education training and information, (f) co-operation among co-operatives, and (g) concerns for community in general, may be registered as a co-operative society with or without limited liability.

The co-operative society is a business organization that would provide an effective tool for community participation and involvement in the operations of a water supply project. It would also promote commercial orientation in the sense that members would expect dividends at the end of every year.

Besides taking a considerably long time to be registered, a co-operative society does not enjoy autonomy from government control in the sense that the Commissioner for Co-operative Development, the Registrar of Co-operative Societies and other officers

⁵¹ Chapter 486, Laws of Kenya (Revised Edition, 1989).

⁵² Act No. 12 of 1997 repealing The Co-operative Societies Act, Chapter 490.

are all appointees and officials of the Government with considerable statutory powers of control of the operations of the co-operative society. To this extent, the Government would still be in control of the water sector.

9.7.4 Trust Corporation

A trust corporation may be registered under the provisions of the Trustee (Perpetual Succession) Act.⁵³ Under this Act, trustees who have been appointed by any body or association of persons established for any religious, educational, literary, scientific, social, athletic or charitable purpose, or who have constituted themselves for any such purpose, may apply to the Minister in the prescribed manner for a certificate of incorporation as a body corporate. The trust corporation has perpetual succession, can sue and be sued in its own name, and can hold movable and immovable property and any other interest belonging to or held by any person(s) for the benefit of the trust. New trustees may be appointed to succeed those deceased or retiring. Besides, the trust would enjoy considerable autonomy, but be accountable to the stakeholders in the operations and management of the project. The board of trustees stands in a fiduciary relationship with regard to the stakeholders on whose behalf they manage the trust corporation.

A detailed analysis of the above options are presented in **Table 9.1** below.

⁵³ Chapter 164, Laws of Kenya (Revised Edition 1981).- 23

Table 9.1: Analysis of Various Substantial Options

OPTION	LEGAL BASIS	ADVANTAGES	DISADVANTAGES	RECOMMENDATION
State Corporation	State Corporations Act (Cap. 446)	<ul style="list-style-type: none"> ❖ Easy to establish ❖ Government backing ❖ Public Institution ❖ Easy transfer of assets 	<ul style="list-style-type: none"> ❖ No independence autonomy ❖ Political interference ❖ Would be contrary to stated policy ❖ Low motivation 	Not recommended
Limited liability Company	Companies Act (Cap. 486)	<ul style="list-style-type: none"> ❖ Easy to incorporate ❖ Commercial orientation ❖ Public can be shareholders (whose company is not wholly owned by council) ❖ Transparency and accountability ❖ May be exempted from taxation if limited by guarantee ❖ Community participation and involvement ❖ May be supported by development financiers ❖ Separate legal entity from shareholders ❖ No direct government involvement and control 	<ul style="list-style-type: none"> ❖ Can be easily wound-up (especially where wholly owned by Council) ❖ Taxation may limit future investment ❖ Can be taken over by a few rich persons purchasing shares thereby frustrating public participation (where company is public) ❖ Transfer of assets problematic 	Not recommended as it raises complex logistic problems

Co-operative Society	Co-operative Societies Act (Cap. 490)	<ul style="list-style-type: none"> ❖ Effective tool for community participation ❖ Business oriented ❖ Profit motivation 	<ul style="list-style-type: none"> ❖ Takes too long to register ❖ Lack of "common interest" among the co-operators ❖ Government involvement and interference ❖ Transfer of assets problematic ❖ May be easily taken over by the rich 	Not a viable option
Trust Corporation	Trustee (Perpetual Succession) Act (Cap. 164)	<ul style="list-style-type: none"> ❖ Easy to register ❖ Perpetual succession, hence sustainability ❖ Independent legal status as public agency ❖ Community service oriented ❖ Governance by own instrument ❖ Political interference unlikely as board of trustees is appointed by stakeholders on basis of instrument ❖ Number of trustees based on instrument ❖ Possible exemption from taxation ❖ Transfer of assets not possible this being a public institution ❖ No shares hence not amenable to acquisition by the rich 	<ul style="list-style-type: none"> ❖ All stakeholders may not be represented on the Board of Trustees 	This is the best option that is recommended for adoption.