



**ANNUAL REPORT 1993**

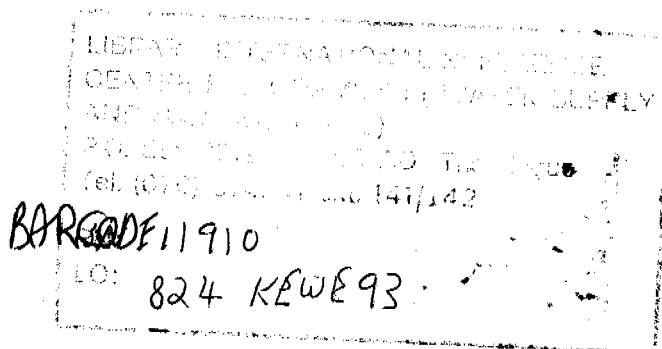
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## List of Abbreviation and Acronyms

AET	-	Adult Education Teachers
CDA	-	Community Development Assistant
COMM. & TRAIN.	-	Community and Training
CWS	-	Community Water Supplies
DDA	-	Demand Driven Approach
DSDO	-	District Social Development Officer
DWE	-	District Water Engineer
ENG.	-	Engineer
FIM	-	Finnish Mark
FINNIDA	-	Finish International Development Agency
H/C	-	Health Centre
Loc.	-	Location
KEFINCO	-	Kenya Finland Company
KEWI	-	Kenya Water Institute
KFWWSP	-	Kenya Finland Western Water Supply Programme
KFLD	-	Kenya Finland Livestock Development
Ksh	-	Kenya Shilling Annual mean rate 1 FIM = 12,323 Ksh
MBR	-	Management By Result
MIS	-	Management Information System
MoCSS	-	Ministry of Culture Social Services
MoH	-	Ministry of Health
MoLRRWD	-	Ministry of Land Reclamation Regional and Water Development
OPER. & MAINT.	-	Operation and Maintenance
P.Sch.	-	Primary School
PWE	-	Provincial Water Engineer
WECO	-	Western Collge of Arts and Applied Science
WSDP	-	Water Supply Development Programme
W/S	-	Water Supply

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## **EXECUTIVE SUMMARY**

Phase IV started in the beginning of May 1993 after the Project Document and the budget were revised several times. Finally the annual budget for the Phase IV was one quarter of the Phase III budget. The changes caused some difficulties in implementing the Programme in the beginning of the phase.

The vehicle fleet was found to be too big and expensive, and the handing over of vehicles to MoLRRWD was started. Vehicles proposed in the Project Document were never bought due to the above reason.

It was also noticed that the value of the stores in the Programme was too high, and a lot of work was completed using the materials from the stores, at the end of the year, the value of the stores had reduced by FIM 1.6 million.

The new Phase will be implemented using a new approach. Adoption of the approach took some time before people become involved in the implementation. This is especially true in those areas which were included in the Programme area during the previous phases. In the new areas, especially Vihiga District, there was pressure for free water points and this delayed implementation of the demand driven approach (DDA).

The feasibility studies of eight piped water supplies proposed to be constructed/rehabilitated in the Project Document were confirmed in the Management Committee meeting on the 19th of November 1993. One of the projects had already started before and the implementation of the remaining ones were started immediately after that decision.

A Water Supply Development Plan for Vihiga District was started and continued throughout the year. It will be finalized during the first half of 1994.

Decentralization and transfer of duties to existing organizations continued quite smoothly. Major part of the key posts in the Programme are already manned by MoLRRWD staff. The demand driven water supply development is now channeled through District Water Engineers and Siaya District was phased out of the Programme activities by the end of year.

## 1. BACKGROUND INFORMATION

The Kenya-Finland Western Water Supply Programme (KFWWSP) was started in February, 1981, jointly funded by the Kenyan and Finnish governments. The fourth phase started being implemented on 1st of May 1993 and will be completed at the end of 1995. The Ministry of Land Reclamation, Regional and Water Development (MoLRRWD) of Kenya and the Ministry for Foreign Affairs of Finland, through FINNIDA, have employed KEFINCO to carry out implementation of the fourth phase.

The Programme area covers Busia, Bungoma, Kakamega, Mt. Elgon and Vihiga Districts of Western Province and has an area of about 7,400 km<sup>2</sup> with a total population estimated to be about 3.0 million people in 1993. In addition, some activities were carried out in Ukwala and Ugunja locations of Siaya District in Nyanza Province, formerly within the Programme area, to facilitate phasing out of the Programme by the end of the year.

The overall objective of the Programme in the fourth phase is to support the Kenyan Government's efforts to provide the population with safe and adequate supply of potable water for better health, improved standard of living and better economic opportunities. In the Programme area the more specific long term development objectives are:

- to consolidate the water supply situation in the area already covered by earlier phases of the Programme so as to ensure sustainable functioning of the present water supplies
- to encourage continuing development of new water supplies using the demand driven approach and to improve the water supply situation in Western Province in a sustainable manner
- to clarify the roles of various Programme partners, public sector, private sector and consumers in the water sector development and strengthen the role of public institutions, in particular MoLRRWD, in promoting, supporting and supervising sector activities.

The approaches and strategies used were in line with those presented in the Project Document. The role of Kenyan line organizations was emphasized. Activities were mainly carried out using the staff in the various ministries and in the Programme. Also private contractors and consultants were used when necessary.

The demand driven approach (DDA) was used to implement the activities during the report period. In this approach, the benefiting community contributed both in materials, labour and funds towards development of their water supplies. In addition, the beneficiaries made decisions on choice of technologies and after development of the water facility took the responsibility for operation and management. It is hoped that using this approach will lead to more sustainable water supplies within the area.



This report covers the Programme activities from May to December 1993 as spelt out in the Workplan. The Project Document gave four major objectives which were translated into four key results which were further developed into detailed activities or tasks. The highlights are included in this report. Appendix 1 gives the targets in the workplan and the achievements.



Completed community well

## **2.0 ACHIEVEMENT OF KEY RESULTS**

### **2.1 KEY RESULT I: CONSOLIDATION OF WATER POINTS**

**Main objectives were:**

**Handing over of old water points, sparepart delivery and strengthening of water point committees**

A task force was formed to carry out an inventory of all water points constructed during the earlier programme phases. By the end of the report period the exercise was completed and the water point register updated. The actual number of all water points was found to be 3174 out of which 3118 had been handed-over to the communities. 46 water points had not been handed-over as either their respective committees had not been registered or water points were still under rehabilitation. As a result over 800,000 people were served with potable water. Appendix 5 gives the details of all the water points constructed by the Programme.

Locational repairmen continued to monitor the technical functioning of hand pumps under the supervision of O&M coordinators in the districts. A total of 2076 out of 2400 water points were maintained which was 85% achievement. This was because most repairmen took more attractive contracts like construction of water supplies. There was therefore need to activate the rest or even recruit new ones. Out of the reported breakdowns, 94% were repaired. Details of the inspections carried out are shown in Appendix 6

Monitoring of spare part distributors continued and in addition to the 6 distributors from the earlier phases, only one in Kakamega out of the 4 targeted was appointed.

Most hardware shops preferred fast moving commodities to spares which they consider are not in constant demand.

To strengthen and activate all old water point committees, 150 water points were targeted for rehabilitation but this was exceeded by 35.

### **2.2 KEY RESULT II: CONSOLIDATION OF PIPED SCHEMES**

**The main objectives were:**

**Completion of pending rehabilitation and repairs of piped schemes from the previous phase. Improvement of O&M and management procedures including financial management and revenue collection for both community managed and MoLRRWD managed piped water supplies.**

In order to secure the technical functioning of the piped schemes, skill training was given, financial planning and budgeting developed as well as revenue collection and billing systems improved. Training of community piped scheme management committees took place as planned and was exceeded by one.

Table 2.1 Community Piped Scheme Management Committees

Location	Scheme	Venue	Date	Attendance	
				Men	Women
W.Uholo	Sigomere W/S	Ninga P.Sch.	13-17/9/93	14	17
S.Ugenya	Sira-Nyawita W/S	Ulwari P.Sch.	9-13/8/93	20	12
S.Samia	Sioport W/S	Sio Port H/C	20-23/7/93	17	22
Kopsiro	Kutere W/S	Chelebei P.Sch.	22-26/11/93	40	14
Soy	Soy W/S	Likuyani H/C	14-20/12/93	13	11

To explain to the consumers the type of management procedures to be employed in their schemes, members days were organized in 5 community water supplies.

Construction of 3 water supplies were started and were at different level of implementation at the end of the year. 4 others were under minor rehabilitations.

Plant operators selected from 5 community piped schemes were attached to the Programme for skill upgrading. These included trainees from Sio Port, Khwisero, Kambiri, Soy and Kutere water supplies. See Table 2.2.

Table 2.2 Skill Upgrading

Type of training	No.of Personnel	Date	Venue
Meter reading and billing course	18	14-16/7/93	KFWWSP Conference room
Clerical officers proficiency course	24	26/7-19/9/93	"
Accounts clerks course in accounting and clerical skills	15	15-16/12/93	"
Water supply operator	1	2/10-1/11/93	KEWI

Water meters were installed at Navakholo, Maturu-Lwandeti, Mumias, Sigomere and Khwisero water supplies. A total of 230 meters were installed out of a target of 160. A total of 534 water meters were repaired and calibrated at the meter testing and calibration unit. The repaired meters were returned to respective districts for re-installation.

Water supplies' organization charts and duty descriptions were updated for 59 water supplies for both MoLRRWD and CWS. Only six out of 37 of the targeted check lists were prepared due to reduction of staff.

100 out of 160 electrical systems were regularly checked, repaired and maintained in water supplies rehabilitated by the Programme. 14 out of 27 pumps were overhauled and repaired at the pump testing unit. It is less than planned, but there were no need to overhaul the remaining ones.

One water supply handbook was prepared and 150 copies printed, out of which 77 copies were distributed to the water supply operators that were trained at WECO. An established 60 copies were distributed to water supplies.

Scheme Operation and Maintenance manuals were prepared as planned and was exceeded by two. One O&M guideline scheduled was produced in a draft form. A final copy of the guidelines is yet to be produced after which a seminar for divisional water officers will be arranged.

Identification of one water laboratory in one water supply per district was completed. Due to lack of funds, establishment and equipment of laboratories were postponed to 1994.

### 2.3 KEY RESULT III: CLARIFICATION OF ROLES

The main objectives were:

**Clarification and strengthening the linkages and collaboration between the Programme, MoLRRWD, MoCSS and MoH and to enable the Programme further decentralize and integrate its operations into the existing institutional setup at Provincial, District, Divisional and Locational levels.**

**To create awareness in water users, water committees, government officers, non-governmental organizations, Programme staff and the private sector on their responsibilities.**

In order to reach the target groups and be able to mobilize and involve them in all aspects of their water supply development, several methods were used. These included socio-economic assessments on demanding communities, siting meetings, zonal committee meetings, water point committee meetings and consumers' days. Both extension workers at the grassroots level, the district staff and the Programme staff at the provincial level mobilized resources towards meeting this target as shown in Table 2.3.

Table 2.3 Awareness Creation Meetings

District	Water Point Committee meetings		Public meetings	Activation meetings
	Old	New		
Kakamega	70	6	340	351
Busia	54	2	401	292
Bungoma	47	3	133	301
Siaya	33	-	239	144
<b>Total</b>	<b>204</b>	<b>11</b>	<b>1113</b>	<b>1088</b>

As part of awareness creation, communities participated in the management of their facilities as shown in Table 2.4.

Table 2.4 Committee involvement

District	Committee registered	Accounts opened	Funds collected
Kakamega	218	21	80,478
Busia	187	45	92,884
Bungoma	75	14	48,609
Siaya	72	64	72,851
Vihiga	-	-	-
Total	552	144	294,822

By the end of the year, formation of committees, funds collection, opening of accounts and various income generating activities were improved.

8 tap committees were formed for the piped schemes to ease their management.

To help to integrate and decentralize the water activities in the districts, a total of 22 Community Development Assistants (CDA) and Adult Education Teachers (AET) from MoCSS were integrated into the Programme to carry out the water activities replacing the directly employed Programme staff. The breakdown of involvement is as shown below.

Kakamega	-	2 (1 CDA and 1 AET)
Vihiga	-	16 Community Development Assistants
Busia	-	0
Siaya	-	4 Adult Education Teachers
Bungoma	-	0

The target was lower than planned due to lack of CDAs and AETs in the target locations. It is hoped that this will be negotiated with relevant Ministries as soon as possible. It was hoped that by the end of 1993 Bungoma district could be decentralized and phased out in 1994. This was not possible and a revised strategy is being adopted to make sure that this transition is realized. This includes meetings with the District Social Development Officer (DSDO) to plan how to get the staff involved.

The DWEs' nominated staff took over the responsibility for coordination and supervision of water point activities after the directly employed staff were laid-off. Sixteen coordination meetings were held.

In the new Vihiga District there were no Programme staff, all the works were implemented by the personnel from the District Water office.

## 2.4 KEY RESULT IV: DEMAND DRIVEN WATER SUPPLY DEVELOPMENT

### Main objectives were:

Demand driven water supply development will be introduced to various partners playing a role in water supply development.

Relevant training material and forms for demand driven process will be prepared and distributed to partners concerned.

New community water points and community managed piped schemes will be implemented according to the demand driven approach with an average community contribution of 30%.

A limited number of piped schemes operated by the MoLRRWD will be rehabilitated and/or expanded providing reliable service for about 40,000 consumers.

Water Supply Development Plan for Western Province will be updated and a similar plan for Vihiga District will be drawn.

Development of information packages was done in time, testing of these packages was carried out both at District and Divisional levels in all the four districts. Further testing was done with extension workers in all the districts. Updating and effecting of corrections is complete, however, editing and printing is on-going. One newspaper publishing was also done in the local publication based in Western Province – Nyota ya Magharibi. Also a radio programme was done. As a result, communities started applying for the water facilities. A total of 530 requests were received, 153 communities assessed and 125 invoiced. Table 2.5 shows the achievement of Demand Driven Approach in 1993. Details are shown in Appendix 5.

Table 2.5 Achievement of Demand Driven Approach in 1993

District	Invoiced	Paid	Const on going	Constructed
Kakamega	47	13	6	9
Busia	20	4	4	-
Bungoma	15	4	1	4
Siaya	2	2	2	-
Vihiga	18	9	3	6
Mt.Elgon	2	1	11	1
Outside Prog.area	21	11	-	-
Total	125	44	27	20

Construction of one community piped water supply was started. Also 20 water points (16 boreholes and 4 dugwells) were successfully completed. The year closed with eleven sites at different stages of construction while seven were at the tender stage giving an overall achievement of 69%. It was noted that the achievement went down compared to 1992 due to the introduction of the new approach and the Ministry's requirement of groundwater permits before drilling which took a long time to obtain from the headquarters. A total population of 5,500 was covered out of targeted 13,750.

Alongside other target groups some leaders in Siaya District received training to equip them with the relevant information about their role in the water sectors in relation to the demand driven approach. Table 2.6 shows locational leaders seminars held in 1993.

Table 2.6 Locational Leaders Seminars

Location	Type of Training	Venue	Date	Women	Men
S.Ugenya	Loc. Leaders	Sidindi S.S.	6-9/12/93	22	34
W.Uholo	Loc. Leaders	Rambula P.S.	7-10/12/93	19	37
Total	2			41	71

As a result of the DDA, there was a lot of demand for hand pumps from private developers, within the Programme area and the neighboring districts. A total of 100 reconditioned pumps were sold to private developers. See Appendix 8. Another 50 were sold to the Kenya-Finland Livestock Development Programme (KFLD).

### 3. ACTIVITIES

#### 3.1 GENERAL

During the report period a number of activities were undertaken as planned. These included preparation of a Workplan for the period May to December 1993 and January to December 1994. Both of these Workplans were presented to the management Committee meeting for approval. There were various meetings which took place including two Management Committee and two supervisory board meetings.

The Programme prepared reports and submitted them as required. These included Monthly Reports, Quarterly Financial Reports and Final Report for Phase III. A three week field investigation was carried out to determine and design a suitable Management Information System (MIS) for the Programme which could be further integrated to the MoLRRWD. On the basis of the findings of the field work a Management Information System (MIS)-manual was prepared as a practical decision making tool. The work was carried out by a short term consultant.



### 3.2 CONSTRUCTION

In order to remove the bulk work of material handling and to avoid excess materials on sites, a full contract system was introduced. Tender boards for the award of contracts were set up in all District Bases chaired by the respective DWE. Consequently, workmanship and quality of materials improved greatly as the supervisors concentrated on quality control.

Seventy installations on new water points including those carried forward from the bridging-over phase were undertaken by local contractors on full contract basis.

The following piped water supplies were implemented using full cost recovery. ↵

1. Maseno University Boreholes water supply was completed and is operational.
2. Kibos School for the Blind borehole water supply commenced and was on-going at progress of 40% at the end of report period.

Appendix 9 gives the details of piped water supplies.



Construction of a slab

O&M data for piped schemes was collected and recorded for : Nambale, Funyula, Nangina, Bumala, Butere, Malava and Ugunja.

Maintenance activities were carried out as scheduled with emphasis on cost sharing by the undertakers. Lack of funds by the undertakers to carry out maintenance activities was noticed as a major bottle neck in water supply operations.

Water sampling and analysis, inspection of sanitary conditions, structural defects, catchment protection and advice on remedial measures were carried out in water points. A total of 591 water points were covered against a target of 300. This was due to public demand on quality determination. 27 bacteriologically contaminated wells were disinfected in the year.



Spring protection

### **3.3 WATER SUPPLY DEVELOPMENT PLAN, VIHIGA DISTRICT**

Preparation of the WSDP for Vihiga District was started by establishment of support networks, planning resources, time schedules and studying the present WSDP.

Data collection was completed on the following areas:

- Existing water supply systems, coverage and water supply management
- Economic, social and cultural studies
- Water demand in the area.

Completion of the field work gave way to compilation and analysis of the collected data. The analysis was started and will continue in 1994. Determination of the administrative boundaries was carried out and completed. A draft of Administrative map was produced. Field data on water resources and water quality was collected. However, this exercise was not completed as scheduled and the remaining work will be carried out in 1994. Data analysis including data storage and handling was started as the first step in preparation of the WSDP report and will continue in 1994.

### **3.4 FEASIBILITY STUDIES**

The project document recommended that 14 feasibility studies should be carried out during the fourth phase. In the Management Committee meeting in June 1993, it was decided that all the required feasibility studies should be carried out before deciding on which water supplies should be implemented. According to these feasibility studies eight water supplies were selected for implementation. The number included three community water supplies and five Ministry managed water supplies.

### **3.5 MECHANICAL WORKSHOP**

The Programme fleet availability averaged 78%. The workshop staff were reduced to 20. Efficiency of the work increased. Total fleet costs reduced by 40% (in FIM) compared to 1992, but its relative share of the Programme budget increased. The cost of maintaining the vehicles is given in Appendix 2.

Other sections of provincial workshop met the set targets. Water meters were repaired in conjunction with training courses and the total amount exceeded the targets.

Other FINNIDA Projects whose vehicles were repaired in the workshop using spares from mechanical store, were invoiced.



Inspection  
Service

### 3.6 STORES AND MATERIAL MANAGEMENT

Ugunja District base store was handed over to Siaya District Water Engineer in November, 1993 with some materials for the DDA needs. As contracts were awarded on full contract basis, there was no need for purchase and store any construction materials except for special cases. Storing and material supply activities continued in piped scheme, hand pump, mechanical and drilling stores. Stores control and material delivery inspection systems were intensified. Left-over materials from water point sites were brought back to the stores. Stores inventory for 1993 was completed during the report period.



Trouble shooting

### 3.7 TRAINING

#### Training of the Workshop Staff

Training in the workshop consisted of training of water meter repairmen, administration staff, pump mechanics, electricians, store keepers and turners on lathe machine as shown in Table 1 in Appendix 3.

#### Training of Water Committees

Water point committees comprise of chairmen, secretaries, treasurers and one or two ordinary members of the community. The village elders who are co-opted members in the committees are also involved. One part of the training was meant to provide committee members with better management skills for successful running of their water supplies.

Training of water committees in operation and maintenance matters continued to assist the owners of water facilities to manage them properly. A total of 32 water committee seminars were held and 1459 persons trained. See Tables 3 and 4 in Appendix 3.

### **Training of Water Points Attendants and the Trainee Attachments**

The main objective was to reinforce the technical skills of pump/spring attendants who are also executive members of water point committees. These attendants were trained to maintain their water points and to carry out preventive maintenance work. A total of 25 water point attendant training events were held, involving 1030 pump/spring attendants. In addition 182 students from 78 institutions, KEWI included, continued their attachment. See Table 2 in Appendix 3.



Installation  
of a pump

### **Training of water supply staff**

- 12 water meter repairmen
- 14 plant and pump mechanics
- 2 turners
- 23 water supply operators.
- 61 meter readers
- 12 revenue clerks/accountants

One training seminar for electricians was jointly conducted together with the Kenya Finland Primary Health Care Programme for 16 participants. However, a seminar on electric and electronic maintenance was not carried out due to lack of facilitators.

### Training of Contractors

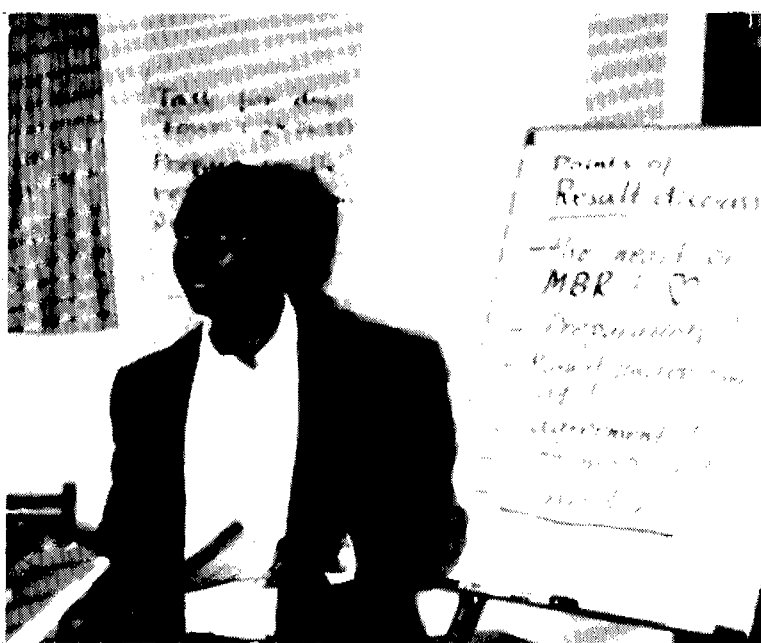
In line with the Programme Document, the Programme continued to use local small scale contractors to carry out the repairs and construction works of water points. During the report period skill improvement training was conducted for 13 water point contractors as Shibwe Health Centre in Kakamega.



Training of water point contractors

### Training on Management by Results

Training on management by results was conducted over a two week period with twenty two participants. Implementation of the course results was started during the report period.



MBR practice

### 3.6 FIELD INVESTIGATION

Ground water is abundantly available at reasonable depths in most parts of the Programme area. Its quality is generally good and no treatment is required, except simple iron removal in some cases. It is a safe and economic source of water both for point source supplies and in some cases also for piped schemes. Surface waters, on the other hand, usually require full chemical treatment before they are acceptable as drinking water. This means high construction and O&M costs for supplies relying on surface water. Difficulties in operation and maintenance are also likely to occur.

For the above reasons, the use of ground water was meant to be maximized and surface water resorted to only when the use of ground water was not feasible.

The Field Investigation is involved in surveying proposed drilling sites and test pumping of subsequently drilled boreholes, and in addition, regular monitoring of ground water levels and spring discharges in the existing monitoring network. Hand drilling is carried out for shallow wells.

Shallow refraction seismic was the main method used for investigating sites proposed for boreholes. Also, the electromagnetic method was employed in search for fractured zones particularly in the crystalline rocks. In addition, the resistivity method was used in areas of volcanic formations.

To ascertain the possibility of striking ground water at shallow depths (usually less than 20m) test drilling by hand auger was carried out. A total of 29 sites were investigated using this method.

A total of 30 boreholes including old ones which were to be rehabilitated or upgraded to small piped schemes were test pumped.

The duration of test pumping depended on the yield of the borehole. Low yielding holes generally meant for hand pumps were tested for 6 hours while high yielding holes were tested for 24 hours.

Step-draw-down tests continued to be used to ascertain the optimum yield of each borehole before performing the 24 hour aquifer test.

### 3.9 MONITORING

Ground water monitoring in the Programme area used to be based on a control point network comprised of 11 observation boreholes, 37 hand dug wells and 32 springs. However it did not adequately cover the whole Programme area. Most of the observation points are concentrated in six small regions, therefore number of observation water points were increased to 126 and also covering the whole Programme area.

Water quality monitoring for performance of piped schemes, water sampling, bacteriological and physico-chemical analysis of potable and waste water was carried out. Advice on remedial measures was given where necessary. A total of 289 samples were analyzed against a target of 200.

To develop water quality and environmental monitoring facilities, the following actions were taken:

- Constitution of an environmental monitoring and protection committee. Organization of the committee and subsequent meetings were postponed to 1994.
- Assessment of existing facilities (infrastructure, staff and equipment) in all the water supplies, was completed as planned.

In order to check theft of pumps, punching identification marks on pumps was intensified. The exercise was carried out by the locational repairmen.



Locational repairmen



## Computerization

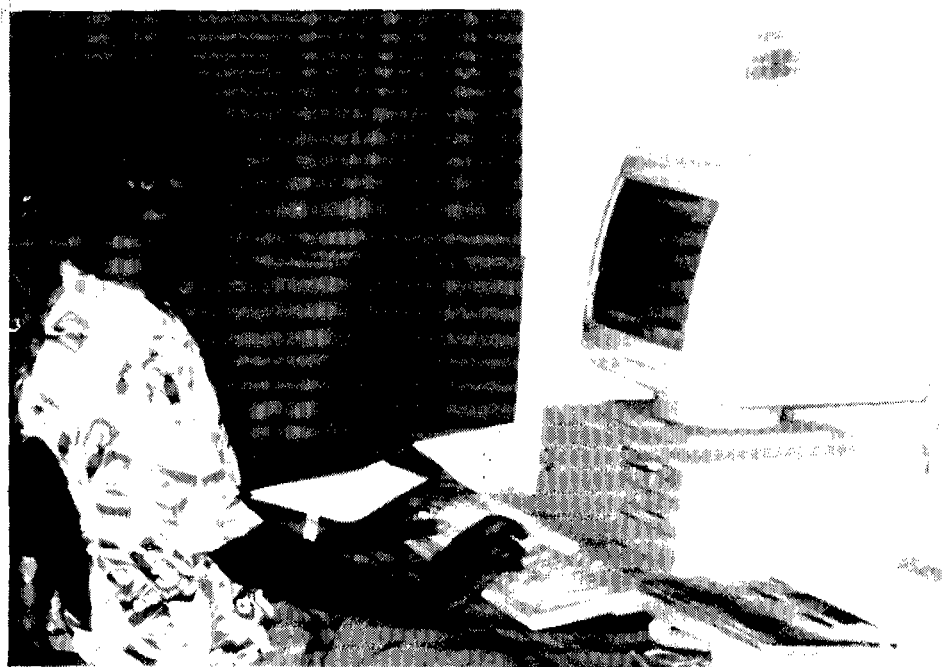
The water point register is a database containing all relevant information on water points such as the location, water quality, condition of the structure, pump details and community information. It consists of several database files among them springs, hand dug wells and boreholes.

The water point system continued to be used in updating of the water point register. The system produces various kinds of reports such as spring yield, water quality, details of water points condition, pump types, community participation and error checking reports.

In the Programme area, computerized data processing has been introduced in various fields from unutilized springs to population forecasts as well as financial and material management.

A new proforma invoicing system was developed for Demand Driven Approach purposes.

The list of software and computers used in the Programme is shown in Appendix 4.



Data processing

#### 4 MAJOR DEVIATIONS FROM WORKPLAN AND CAUSES

The activities were implemented almost entirely according to the Project Document and the Workplan.

Major deviations were:

- in water point construction, enough requests from communities were received, but the construction did not start in as many sites as planned.
- in piped scheme construction, the decisions on the schemes to be implemented had to await completion of the feasibility reports.
- in rehabilitation of regular river gauging stations, only three projects were implemented instead of the 30 planned.

#### Water Point Construction According to Demand Driven Approach

The demand driven approach in water supply development recommended in the Project Document and implemented in KFWWSP in 1993 is a new way of constructing improved water supplies in the Programme's history. The implementation speed was estimated when the Workplan for 1994 was prepared.

It was assumed that District Water Engineers could record and process 20 applications from communities each month. This number was exceeded quite a lot. Instead of the assumed 20, DWEs recorded over 60 applications per month. The Programme has been receiving water point applications during the previous phases, and that is why this number does not give a good picture of the success of the demand driven approach. Naturally it shows that there is demand for improved water supplies in the Programme area.

KFWWSP used the supply driven approach for many years before the demand driven approach took place. It is therefore not surprising that the communities still believe that the Programme will implement projects without community contributions. This might partly explain why the construction of new water points has been behind the targets presented in the Workplan. The Programme has organized several seminars and meetings in the districts to support the demand driven approach, but there are still local leaders and politicians who are not aware of the ideology of the demand driven approach. This means, when leaders organize public meetings, they do not convince the community members on the need to contribute towards the improved water supplies.

It is quite understandable that after working for ten years with the supply driven approach, also the staff has to change their attitudes and learn new ways of working. District Water Engineers have a key role to play in developing the new water points, while during the previous phases the projects were implemented by the Programme. However, point water supply development improved towards the end of the year.

## **Piped Scheme Construction**

The major part of the improvements among the piped water supplies was done by completing the projects started during the Phase III. Implementation of the new schemes was delayed because of the feasibility studies which had to be completed before decisions were made on which projects to be implemented.

The community work on community operated piped water supplies is extremely important before implementation, also it takes a lot of time to meet the 30% community contribution. The Programme got a permission to start Kambiri Water Project before all the feasibility reports were completed. The project costing Ksh 14 million was started and seems to be promising. The community members were able to meet the required 30% mainly by labour and materials.

After the Management Committee meeting made the decision on which piped water supply projects were to be implemented, the community work started immediately in Chepkube. However, it is expected that it will take some time to activate the community and collect the required contributions.

According to the original Project Document, it was estimated that eight piped water supplies will be implemented, out of which four will be managed by communities and the remaining four by MoLRRWD. However, it was mutually decided later that five of them to be implemented and run by MoLRRWD.

## **Other Deviations**

Almost all the other deviations which are mostly quite small were caused by the lack of funds. The most remarkable deviations caused by lack of funds was the rehabilitation of only 3 river gauging stations instead of the planned 30 and equipping the district water laboratories.

Handing over of old water points costed more than expected because most of the deepened dugwells required compressors and de-watering pumps. The number of water point rehabilitated exceeded the planned 150 by 15. A total of 185 water points were rehabilitated before handing over to the beneficiaries.

## **5. LESSONS LEARNED**

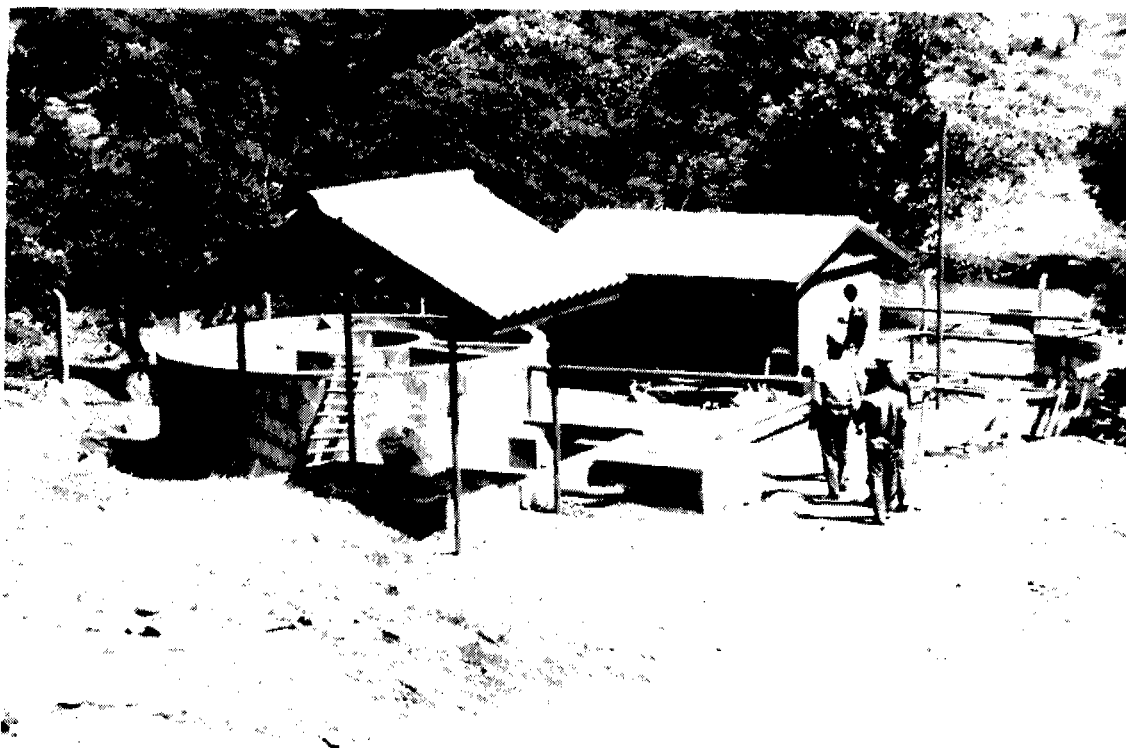
The most important thing to note from the experiences got during the reporting period is the difficulty for a big organization to adopt a new way of thinking and new working methods. This was more due to the fact that the beneficiaries were used to the supply driven approach. The production of new water points using the new approach was therefore not as fast as assumed in the Workplan. It is necessary that the Programme will continue with the new approach up to end of Phase IV. A change in the approach will cause extra delays and confusions as the people will try to adopt the modified approach.

At present it seems that the demand driven water point development may not meet the targets given in the Project Document. The Programme should therefore create an alternative solution to reach at least the targeted population. Looking at the many reconditioned pumps sold to private consumers, it shows clearly that demand for improved water supply is existing.

The piped water supplies managed by the communities through water cooperatives has been doing well. It is gratifying to note that even big schemes such as Kambiri with ca 150 connections, could be implemented through the demand driven approach. The beneficiaries are working very diligently for their own project.

The role and the necessity of the Supervisory Board recommended in the Project Document should be reconsidered. The interest of officers from different ministries in the Board meetings has not been as encouraging as previously though. Monitoring, coordination and cooperation of the Programme activities could be discussed in other fora where those organizations involved are present.

The operation and maintenance costs of the vehicle fleet and the drilling rigs is quite high compare to the annual budget for PWE and DWEs. Selling of extra capacity is highly recommended, and a proposal on selling some material was already made to the Management Committee meeting on the 19th of November.



Soy water supply plant

## 6. FINANCIAL PERFORMANCE

### 6.1 ACTUAL PROGRAMME COST AND DEVIATION FROM THE BUDGET

The total Programme disbursement from FINNIDA funds was FIM 7.465.540,00. This was more than the original budget by FIM 465.540,00 which was justified by the reallocation of funds, proposed by FINNIDA. The details are shown in Figure 6.1, while the monthly comparison of the actual cost with the budget is shown in Figure 6.2. The cost report is given in Appendix 10.

The MoLRRWD contribution was FIM 618.020,00 which was used for the salaries of the local personnel.

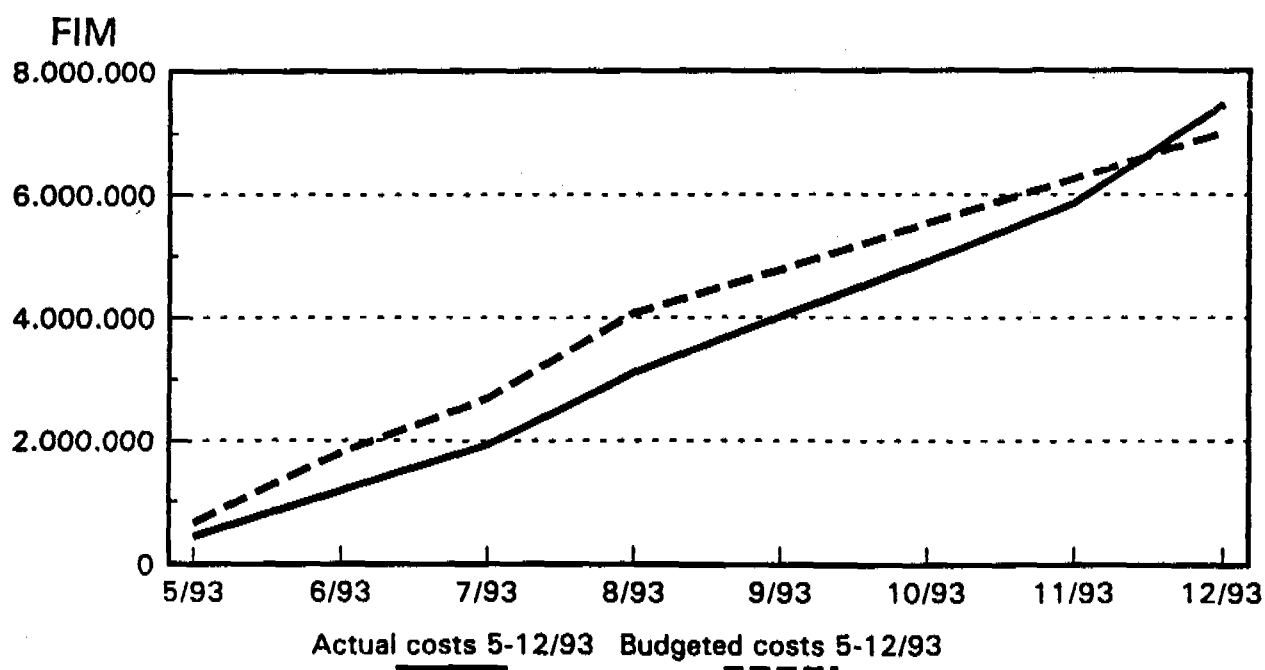


Figure 6.1 Cumulative Programme Costs in 1993

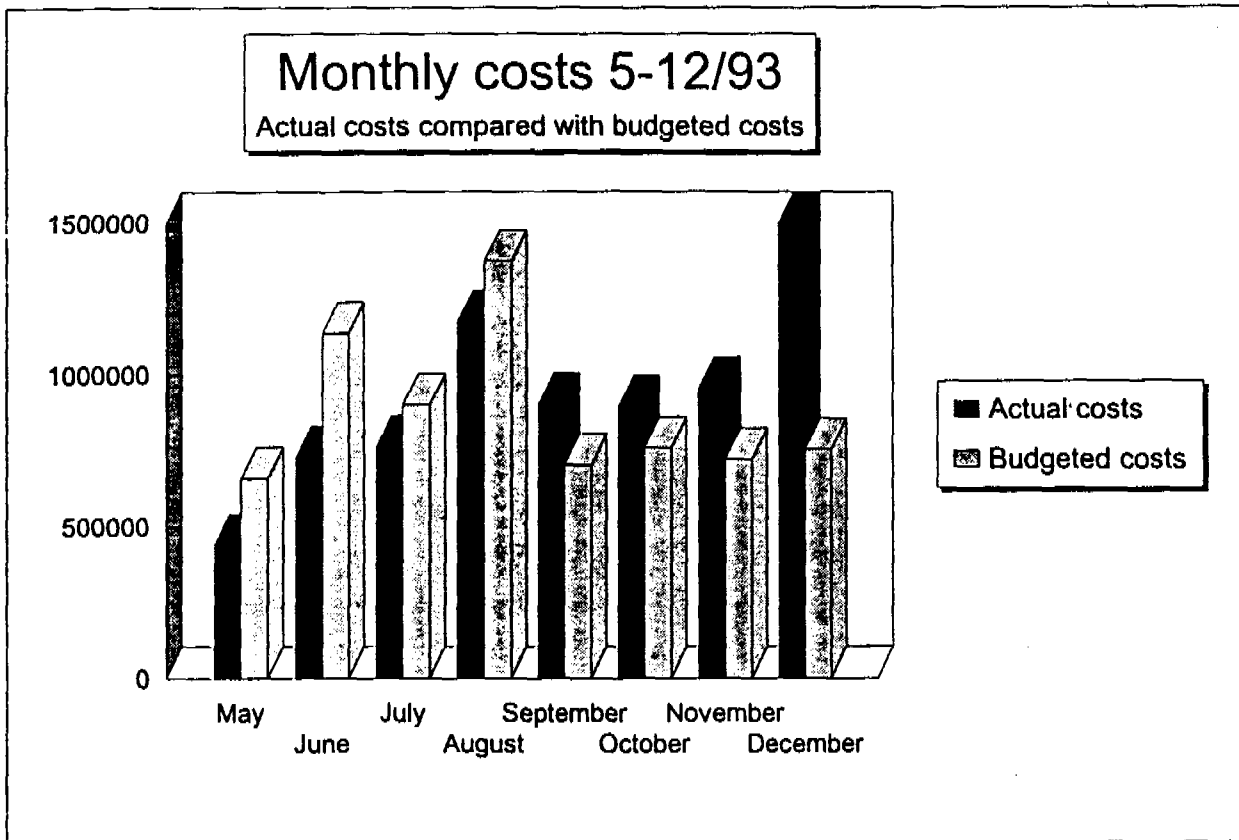


Figure 6.2 Monthly Costs in 1993

In the period from May to August the actual costs were less than budgeted due to late procurement of major investment goods. These procurement were executed on September–November. Reallocated funds was used in December for purchase of pipes to be used in construction works planned for 1994.

The exchange rate used during the reporting period was 1 FIM = Ksh 12,323

## 6.2 PROGRAMME INCOME

The total income generated during the report period was Ksh 10,517,117,00. The community contribution collected was Ksh 6,122,287,00 out of budgeted Ksh 3,549,024,00. Reason for exceeding the community contribution collected was that during the reporting period more full cost recovery boreholes and piped schemes were constructed though the number of community water points remained behind targeted. Details are given in Table 6.1.

Table 6.1 Community contribution

Type	Category	Nº	Cost
Borehole	25%	2	190.000,00
	75%	5	1.508.470,00
	30%	1	138.000,00
	100%	4	1.856.852,95
Total			3.693.322,95
Dug wells	25%	5	56.221,00
	75%	1	94.677,00
		-	
Total			150.898,00
Springs	25%	2	11.600,00
Total			11.600,00
Piped Schemes	100%	2	2.080.300,00
	30%	1	100.586,00
Total			2.180.886,00
Others	25%	1	25.000,00
	100%	3	60.580,00
	Total		85.580,00
GRAND TOTAL			Ksh 6.122.286,95

A total of Ksh 106.168,00 was refunded to one owner due to the failure (dry) of his well.

#### Other Income

A total of Ksh 4.394.829,00 was collected by selling the following items:

- workshop services	2.536.372,00
- reconditioned pumps	684.258,00
- vehicles	288.000,00
- an electric pump to Vihiga	194.416,00
- scrapped spares and tools	691.783,00

## 7 PROGRAMME PERSONNEL

Table 7.1 below shows the position of the Programme staff establishment between May and December 1993. The number of consultant staff remained as proposed in the Project Document and the ministries staff was more or less constant. The Programme's directly employed staff reduced gradually.

Table 7.1 Staff establishment May-December, 1993

DEPARTMENTS	CONSULTANTS	MoLRRWD	MoCSS	KFWWSP	TOTAL
ADMINISTRATION	2	5	-	9	16
PLANNING & DESIGN	-	19	-	14	33
OPER.& MAINT.	1	20	-	25	46
CONSTRUCTION	2	15	-	82	99
COMM.& TRAIN.	1	9	2	24	36
RESIDENT ENG.	-	5	-	-	5
TOTAL	6	73	2	154	235

During the reporting period the Programme continued to decentralize more personnel and activities to the District Water Engineers' Offices. CDAs and AETs from the Ministry of Culture and Social Services and Ministry of Education are not referred in the table, but still played an important role in the provincial water supply development at locational level. Table 7.2 shows the Programme's staff projection for the two remaining years.

Table 7.2 Staff Projection

CATEGORY	PLANNED		
	1993	1994	1995
CONSULTANT	6	6/4	3
MoLRRWD	63	46	46
MoCSS	21	4	4
KFWWSP	154	128/124/108	72
TOTAL	244	184/178/162	125



**KEY RESULT 0. - GENERAL**

KEY RESULT	MAJOR ACTIVITIES	DETAILED ACTIVITY/TASK	1993		
			TARGETS	ACHIVEMENT	
0 GENERAL	0.1. Work Plan	Planning activities	2	2	
	0.2. Management Committee	Meetings	2	2	
	0.3. Supervisory Board	Meetings	3	2	
	0.4. Coordination Meetings	Meetings	37	36	
	0.5. Monthly Meetings	Meetings	Cont.	40	
	0.6. Review/Evaluation	Review / Evaluation	1	0	
	0.7. Reporting		Monthly Report	8	8
			Quarterly financial report	2	2
			Annual report, 1993	1	1
			Final report, third phase	1	1
Final report, fourth phase					
0.8. Information Sessions on Phase IV for districts.	Informal meetings	8	5		
0.9. Training on ROMS	Implementation	1 Course 22 Participants	28 Participants		
0.10. Management Information System (MIS).	Training		5 sessions, 25 Participants	0	
		Testing			
		MIS in use	Cont.		

KEY RESULT	MAJOR ACTIVITIES	DETAILED ACTIVITY/TASK	1993	
			TARGETS	ACHIEVEMENT
0 GENERAL (cont'd)	0.11. Support by Programme Workshop	1. Offering transport pool services	cont.	cont.
		2. Servicing and repairing vehicles, plants, etc	cont.	cont.
		3. Procurement of spares and materials	cont.	cont.
		4. Training of mechanics	cont.	cont.
		5. Developing a plan for decentralization/consolidation	Plan	Plan
		6. Implementation	Imp.	Imp.

KEY RESULT	MAJOR ACTIVITIES	DETAILED ACTIVITY/TASK	1993	
			TARGETS	ACHIEVEMENT
0. GENERAL (cont'd)	0.12 Training  a) On-the-job training of staff in District and Provincial Workshops	1. Training of water meter repairmen	8	12
		2. Plant and pump mechanics trained to repair centrifugal and submersible pumps.	18	14
		3. Training seminar for electricians.	1	1
		4. Training seminar for store keepers.	1	1
		5. Turners trained on machining	2	2
		6. Mechanics trained on overhauling engines	6	10
		7. Seminar on electric and electronic maintenance and repair	1	0

KEY RESULT	MAJOR ACTIVITIES	DETAILED ACTIVITY/TASK	1993	
			TARGETS	ACHIEVEMENT
0. GENERAL (cont'd)	0.12 (cont'd) b) Operators	1. Three week training course for water supply operators at WECO (for operators with no previous professional training)	20 operators	23
		2. Three month training course at KEWI on three different levels; basic intermediate, advanced.	10 persons	1
	c) Line Patrollers and meter readers	1. Two day training courses for meter readers and billing personnel	60 persons	61
		2. One day courses for line patrollers	-	
	d) Water point contractors	1. Two month training course on technical aspects in construction of water points	20 contractors	13
		2. Three day training course on management skills	20 contractors	20
	e) Extension workers and CDAs	1. Training extension workers in participatory training skills.	3 courses 90 persons	3 courses 90 persons
		2. Training of CDAs in monitoring tasks.	cont.	cont.

KEY RESULT	MAJOR ACTIVITIES	DETAILED ACTIVITY/TASK	1993	
			TARGETS	ACHIEVEMENT
0. GENERAL	0.13 Monitoring programme for performance of water points	1. Updating of appropriate monitoring tools for community water supplies	2	2
		2. Involvement of community on monitoring through district coordinating team	500	500
		3. Monitoring of water points on their technical functioning	2400	2076
		4. Monitoring of spare parts distribution system	8	7
		5. Monitoring the performance of the extension workers.	cont.	cont.
		6. Monitoring of water point committees	500	500

KEY RESULT	MAJOR ACTIVITIES	DETAILED ACTIVITY/TASK	1993	
			TARGETS	ACHIEVEMENT
0 GENERAL	0.13 (cont'd) Monitoring programme for performance of piped schemes	1.Rehabilitation of Regular River Gauging Stations (RGS)	30	3
		2.River discharge measurements on the hydrometeorological network	60	0
		3.Carry out water sampling, bacteriological and physico-chemical analysis of potable and waste water and advice on remedial measures as necessary	200	237
		4. O & M data for piped schemes collected, recorded and reported monthly.	14 W/S	7 W/S

## 1.2 KEY RESULT 1. - CONSOLIDATION OF WATER POINTS

KEY RESULT	MAJOR ACTIVITIES	DETAILED ACTIVITY/TASK	1993	
			TARGETS	ACHIEVEMENT
1 CONSOLIDATION WATER POINTS	1.1 Preparation and distribution of training manuals	1. Water point attendant training manuals a. preparation b. printing c. distribution	150	150
		2. Water Committee training manuals a. preparation b. printing c. distribution	150	150
	1.2 Training of water point attendants and the trainers	1. Training of DWE's technical staff to be trainers for water point attendants	28 Persons	28 persons
		2. Water point attendant training seminars for old water points.	28 seminars 840 attendants	28 seminars 1665 attendants
	1.3 Management training for water committees	1. Water committee training in O & M matters	cont.	cont.
		2. Water committee training seminars for old water points	28 Seminars 360 committees	
	1.4 Selection of additional spare part distributors	1. Selection of additional spare parts distributors	4 Distributors	1 distributor

KEY RESULT	MAJOR ACTIVITIES	DETAILED ACTIVITY/TASK	1993	
			TARGETS	ACHIEVEMENT
1. CONSOLIDATION/ WATER POINTS	1.5 Development of water quality and environmental monitoring facilities	1. Constitute an environment monitoring and protection committee	Comm. const.	Assessed
		2. Assess current situation/facilities (infrastructure, staff, equipment, etc)		
		3. Carry out Iron Removal study	Prog. Rep.	Cont.
		4. Carry out water sampling and analysis; check sanitary conditions, structural defects, catchment protection, etc, and advice on remedial measures	320	317
			256	256
		5. Spring discharge measurement		
		6. Measure groundwater levels in the observation network	960	960
		7. Quarterly Environmental Committee meetings	2	2



### 1.3 KEY RESULT 2. - CONSOLIDATION OF PIPED SCHEMES

KEY RESULT	MAJOR ACTIVITIES	DETAILED ACTIVITY/TASK	1993	
			TARGETS	ACHIEVEMENT
2. CONSOLIDATION/ PIPED SCHEMES	2.1 Training of the owners in administrative and managerial skills (community operated water supply systems)	1. Training of management committees and scheme managers	4	4
		2. Training of revenue clerks/ accountants	6	15
	2.2 Development of financial planning and budgeting (community operated water supply systems)	1. Cash flow control and management	6	6
		2. Budgeting and financial reporting in water supplies	6	6
		3. Set up auditing procedures in water supplies	7	0

KEY RESULT	MAJOR ACTIVITIES	DETAILED ACTIVITY/TASK	1993	
			TARGETS	ACHIEVEMENT
2. CONSOLIDATION/ PIPED SCHEMES	2.3 Improving revenue collection/billing	1. Assist water committees install water meters	160	231
		2. Water meters repaired and calibrated	400	534
	2.4 Organization charts and job descriptions	1. Water supply organization charts with responsibilities and duties for MoLRR&WD	40	40
		3. Organization and responsibilities for community operated water supplies	6	7
	2.5 Development of proper preventive and corrective maintenance system	1. Prepare check list for daily duties	37	12
		2. Carry out maintenance activities as scheduled	26	21
		3. Maintenance of electrical systems	160	140
		4. Overhauling and repair of pumps	27	14

KEY RESULT	MAJOR ACTIVITIES	DETAILED ACTIVITY/TASK	1993	
			TARGETS	ACHIEVEMENT
2. CONSOLIDATION/ PIPED SCHEMES	2.6 O & M Manuals and instructions	1. Water supply operator's handbook a. preparation b. printing c. distribution	150	150
		2. Preparing general O & M guidelines	1	1
		3. Divisional Water Officers introduced to guidelines	1	0
		4. Preparation of scheme O & M manuals	6	8
		6. Community Scheme Managers are introduced to use of O & M manuals.	6	0
		2.7 Strengthen District maintenance teams	1. Tools and spare part kits supplied to District Water Engineers.	4
	2.8 Development of water quality control system	1. Identify, establish, and equip a lab in one water supply per district.	4	

### 1.4 KEY RESULT 3.- CLARIFICATION OF ROLES

KEY RESULT	MAJOR ACTIVITIES	DETAILED ACTIVITY/TASK	1993	
			TARGETS	ACHIEVEMENT
3. CLARIFICATION OF ROLES	3.1 Institutional development strategy, decentralization and transfer plan for responsibilities	1. Strategy discussed and established by meetings		done
		2. Plan for the transfer of responsibilities and decentralization	Plan	plan
		3. Approval of plans		
	3.2 Implementation of the decentralization and transfer plan	1. Operations in Siaya District phased out	1 district	1
		2. Operations in Bungoma District decentralized	1 district	0
		3. District operations in Busia and Kakamega decentralized		0

KEY RESULT	MAJOR ACTIVITIES	DETAILED ACTIVITY/TASK	1993	
			TARGETS	ACHIEVEMENT
3 CLARIFICATION OF ROLES	3.3 Creation of awareness.	1.Socio-economic assessment on demanding communities	50	50
		2.Siting meetings	50	50
		3.Zonal committee meetings	11	11
		4.Water point committee meetings	140	120
		5.Consumers' days	7	7
	3.4 Community commitment to the proposed facility	1.Formation of water associations	4	0
		2.Formation of well committees	50	7
		3.Formation of Tap committees	8	4
		4.Land easement	80	10
		5.Community contribution for the proposed water point	KES 3,732,000	
	3.5 Cooperation with MoCSS, MoH, KFPHCP and NGOs	6.Semi-private and private water points - contribution from users	KES 4,349,000	
		1. Selection & involvement of extension workers in project activities	48	25
		2. Study tours	2	0

### 1.5 KEY RESULT 4. - DEMAND DRIVEN WATER SUPPLY DEVELOPMENT SYSTEM

KEY RESULT	MAJOR ACTIVITIES	DETAILED ACTIVITY/TASK	1993	
			TARGETS	ACHIEVEMENT
4 DEMAND DRIVEN WATER SUPPLY DEVELOPMENT	4.1 Development & distribution of information packages	1. Testing in the Districts	Tested	Tested
		2. Updating and effecting corrections	Effectuated	Done
		3. Printing and distribution	800 copies	0
	4.2 Implementation of promotional campaigns through mass media, public gatherings.	1. Visit to schools, churches, women groups and Health Centres	20	0
		2. Radio and TV programs	3	1
		3. Newspapers/newsletters.	5	1

KEY RESULT	MAJOR ACTIVITIES	DETAILED ACTIVITY/TASK	1993	
			TARGETS	ACHIEVEMENT
4.DEMAND DRIVEN WATER SUPPLY DEVELOPMENT SYSTEM.	4.3 DWEs implement development projects as per feasible requests.	1. Processing of requests	500	500
		2. Field investigations		
	a. Technical surveys	69	69	
	b. Compiling report with recommendations for approval	55	55	
	4.3a. Point water sources	3. Construction		
		a. Joint tendering of facilities	55	23
		b. Actual construction	55	20
		c. Joint supervision and signing of completion certificates	45	0
	4.3b. Piped schemes	1. Feasibility studies: Economic, Social and technical data	8	14
		2. Surveying	8	0
		3. Preparation and approval of design report	3	0
		4. Preparation of tender documents	3	0
	4.3c. Piped schemes from previous phase	5. Tender awarding	3	1
		6. Construction	3	1
		1. Construction of W/S carried over from Phase III	3	3

## APPENDIX 2

KENYA-FINLAND WESTERN WATER SUPPLY PROGRAMME

SUMMARY OF COSTS FOR PROGRAMME VEHICLES DURING : 1.5. - 31.12.1993

No	Vehicle	Spare parts Ksh	Tyres and tubes Ksh	Fuel and lubr. Ksh	Licences & insur. Ksh	Labour cost Ksh	Total Cost Ksh	KM driven	Average fuel c. l/100km	Cost/Km Ksh
1	L/ROVER KDW 414	158,424.55	54,416.10	83,867.95	1,620	5,495.00	303,823.60	24,402	13.65	12.45
2	L/ROVER KDW 424	174,554.65	45,537.90	89,715.05	1,620	5,040.00	316,467.60	22,350	16.07	14.16
3	L/ROVER KDW 426	115,401.90	29,414.90	112,260.00	1,620	4,987.50	263,684.30	18,892	20.12	13.96
4	L/ROVER KDW 461	96,786.40	0.00	80,322.65	1,980	3,867.50	182,956.55	27,274	11.48	6.71
5	L/ROVER KDW 462	212,069.35	54,147.90	125,525.95	1,620	5,722.50	399,085.70	34,283	14.60	11.64
6	L/ROVER KDW 463	207,479.20	0.00	36,417.20	1,620	7,525.00	253,041.40	11,533	12.75	21.94
7	L/ROVER KDW 464	143,225.00	29,414.90	107,308.20	1,620	6,160.00	287,728.10	29,091	14.43	9.89
8	L/ROVER KDW 465	122,073.30	27,110.10	98,360.75	1,620	3,745.00	252,909.15	30,538	12.76	8.28
9	L/ROVER KDW 466	145,199.95	54,898.30	119,237.15	1,620	3,867.50	324,822.90	38,183	12.44	8.51
10	L/ROVER KDW 467	288,275.30		106,684.45	1,980	6,142.50	403,082.25	30,369	14.09	13.27
11	L/ROVER KDW 468	181,820.20	63.40	94,877.45	1,980	5,075.00	283,816.05	31,881	10.88	8.90
12	L/ROVER KDW 469	164,238.75	2,984.70	75,211.80	1,980	5,705.00	250,120.25	22,849	13.13	10.95
13	L/ROVER KDW 470	111,339.90	2,108.80	101,579.30	1,980	6,370.00	223,378.00	32,439	12.10	6.89
14	L/ROVER KDW 471	102,397.55	1,846.50	121,438.50	1,620	4,589.00	231,891.55	38,443	12.64	6.03
15	L/ROVER KDW 472	101,215.15	29,414.90	143,213.90	1,620	3,990.00	279,453.95	37,994	15.14	7.36
16	L/ROVER KDW 473	71,413.95		60,200.95	1,980	3,080.00	136,674.90	18,391	13.06	7.43
17	L/ROVER KDW 474	164,190.25	29,414.90	77,749.85	1,620	5,355.00	278,330.00	26,295	11.62	10.58
18	L/ROVER KDW 475	111,830.00	1,950.50	80,096.40	1,980	5,197.50	201,054.40	26,351	11.60	7.63
19	L/ROVER KDW 478	119,150.20	0.00	22,150.10	1,980	3,622.50	146,902.80	6,797	11.86	21.61
20	L/ROVER KDW 479	120,025.15	14,363.75	119,930.05	1,620	2,905.00	258,843.95	45,475	10.39	5.69
21	L/ROVER KXU 127	110,615.10	33,180.20	86,488.05	1,620	4,445.00	236,348.35	25,542	13.30	9.25
22	L/ROVER KXU 129	174,401.90	907.40	80,980.45	1,620	8,172.50	266,082.25	24,199	13.18	11.00
23	L/ROVER KXU 130	130,132.85	85,423.30	97,832.85	1,620	3,710.00	318,719.00	26,479	14.33	12.04
24	L/ROVER KXU 132	105,975.80	28,507.50	73,627.85	1,980	5,687.50	215,778.65	22,979	12.71	9.39
25	L/ROVER KXU 133	173,582.80	12,800.00	81,219.80	1,980	4,462.50	274,045.10	23,869	13.34	11.48
26	L/ROVER KXU 139	197,255.95	25,600.00	126,761.65	1,620	7,735.00	358,972.60	34,140	14.72	10.51
27	L/ROVER KYG 689	73,937.30	58,893.20	70,497.35	1,620	3,115.00	208,062.85	19,941	13.97	10.43
28	L/ROVER KYG 692	176,095.35	0.00	103,728.05	1,620	7,665.00	289,108.40	24,917	15.51	11.60
29	L/ROVER KYG 697	89,615.15	0.00	56,384.70	1,620	3,465.00	151,084.85	18,635	11.98	8.11
30	L/ROVER KAC 133P	44,214.30		84,824.60	1,620	1,785.00	132,443.90	27,397	12.40	4.83
31	L/ROVER KAC 148P	26,829.35	28,843.50	74,953.45	1,980	1,505.00	134,111.30	23,922	12.54	5.61
32	L/ROVER KAC 149P	50,771.45	31.70	76,105.70	1,980	1,662.50	130,551.35	25,447	11.76	5.13
33	L/ROVER KAC 151P	55,845.90	57,015.00	90,867.05	1,980	2,117.50	207,825.45	32,279	11.23	6.44
34	L/ROVER KAC 152P	75,694.95	29,414.90	93,125.05	1,980	3,045.00	203,259.90	32,448	11.52	6.26
LAND ROVER TOTALS :		4,396,079 *	737,704 *	3,053,544 *	60,120 *	157,014 *	8,404,461.35 *	916,024 *	13.06 *	9.17



## KENYA-FINLAND WESTERN WATER SUPPLY PROGRAMME

## SUMMARY OF COSTS FOR PROGRAMME VEHICLES DURING : 1.5. - 31.12.1993

No	Vehicle	Spare parts Ksh	Tyres and tubes Ksh	Fuel and lubr. Ksh	Licences & insur. Ksh	Labour cost Ksh	Total Cost Ksh	KM driven	Average fuel c. /100km	Cost/K Ksh
35	SUBARU KDW 441	7,813.15	5,355.60	23,461.40	1,620	315.00	38,565.15	6,600	11.75	5.84
36	SUBARU KDW 442	42,341.80	11,231.20	40,735.35	1,620	875.00	96,803.35	11,858	10.86	8.16
37	SUBARU KDW 443	27,425.35	260.00	19,583.70	1,620	437.50	49,326.55	5,216	12.83	9.46
38	SUBARU KDW 446	29,898.70	12,349.00	12,640.00	1,620	630.00	57,137.70	3,024	13.01	18.89
39	SUBARU KDW 447	12,192.80	5,095.60	46,295.95	1,620	700.00	65,904.35	15,415	9.02	4.28
40	SUBARU KDW 448	43,208.05	8,680.80	51,548.55	1,620	3,797.50	108,854.90	16,085	10.59	6.77
41	SUBARU KDW 449	38,485.35	520.00	43,318.05	1,620	1,645.00	85,588.40	12,311	10.49	6.95
SUBARU TOTALS :		201,365.20 *	43,492.20 *	237,583.00 *	11,340 *	8,400.00 *	502,180.40 *	70,509 *	10.65 *	7.12
42	ISUZU NKR KAC 557R	25,388.40	79,512.80	73,101.70	4,500	2,345.00	184,847.90	20,268	15.06	9.12
43	SISU LORRY KUA 782	33,348.65	96,369.30	133,105.80	4,500	3,368.75	270,692.50	16,411	30.38	16.49
44	SISU LORRY KDV 518	224,035.95	1,100.00	131,726.05	4,500	9,730.00	371,092.00	14,317	33.21	25.92
45	SISU LORRY KDV 534	168,242.95		161,994.25	4,500	3,570.00	338,307.20	13,886	46.73	24.36
46	SISU LORRY KDV 540	12,403.45		4,289.20	4,500	1,137.50	22,330.15	0	ERR	ERR
47	SISU LORRY KDW 480	25,689.40	1,064.00	131,831.85	4,500	2,327.50	165,412.75	10,130	44.76	16.33
48	SISU LORRY KXY 043	18,075.55	6,600.00	5,851.15	4,500	1,120.00	36,146.70	0	ERR	ERR
49	M/B LORRY KDW 439	32,039.30	75,246.20	117,196.85	4,500	4,830.00	233,812.35	12,014	38.38	19.46
LORRY TOTALS :		513,835.25 *	180,379.50 *	685,995.15 *	31,500 *	26,083.75 *	1,437,793.65 *	66,758 *	38.01 *	21.54
50	V.TRACTOR KDW 458	12,280.85		75,837.85	1,800	1,540.00	91,458.70			
51	V.TRACTOR KDW 459	68,689.40		62,430.25	1,800	2,310.00	135,229.65			
52	V.TRACTOR KDW 477	27,894.40	47,578.90	94,397.10	1,800	4,287.50	175,957.90			
53	V.TRACTOR KDW 485	13,863.90		21,433.60	1,800	997.50	38,095.00			
54	L.EXCAVATOR KUA775				900		900.00			
55	L.EXCAVATOR KDW432	22,632.25		29,210.65	900	1,610.00	54,352.90			
TRACTOR TOTALS :		145,360.80 *	47,578.90 *	283,309.45 *	9,000 *	10,745.00 *	495,994.15			
56	M/B RIG KDV 545	48,383.45	5,500.00	353,019.55	4,500	2,940.00	414,343.00			
57	M/B RIG KDW 451	33,027.60	5,500.00	425,577.75	4,500	6,020.00	474,625.35			
RIG TOTALS :		81,411.05 *	11,000.00 *	778,597.30 *	9,000 *	8,960.00 *	888,968.35			

## KENYA-FINLAND WESTERN WATER SUPPLY PROGRAMME

SUMMARY OF COSTS FOR PROGRAMME MOTOR BIKES DURING :  
1.5. - 31.12.1993

No	Motorbike	Spare parts Ksh	Tyres and tubes Ksh	Fuel and lubr. Ksh	Licences & insur. Ksh	Labour cost Ksh	Total Cost Ksh	KM driven	Average fuel c. l/100km	Cost/K Ksh
1	SUZUKI KWK 727	17,984.80	314.20	1,584.15	450.00	1,163.00	21,496.15			ERR
2	SUZUKI KWX 710	17,496.50		4,623.00	450.00	1,680.00	24,249.50			ERR
3	SUZUKI KWX 711		4,029.20		450.00	70.00	4,549.20			ERR
4	SUZUKI KWX 715		4,029.20		450.00	70.00	4,549.20			ERR
5	SUZUKI KXV 779				450.00		450.00			ERR
6	SUZUKI KXV 780	17,785.60	60.00	4,407.20	450.00	1,163.75	23,866.55			ERR
7	SUZUKI KXV 781				450.00		450.00			ERR
8	SUZUKI KXV 782	11,126.80		3,081.15	450.00	280.00	14,937.95			ERR
9	SUZUKI KXV 783	1,185.00		1,880.05	450.00		3,515.05			ERR
10	SUZUKI KXV 787	14,899.35		4,176.30	450.00	840.00	20,365.65			ERR
11	SUZUKI KXV 789				450.00		450.00			ERR
12	SUZUKI KXV 790				450.00		450.00			ERR
13	SUZUKI KXV 791	2,365.20			450.00	280.00	3,095.20			ERR
14	SUZUKI KXV 792				450.00		450.00			ERR
15	SUZUKI KAA 729E	21,406.35	4,752.20	31,382.70	450.00	3,570.00	61,561.25			ERR
16	SUZUKI KAA 730E				450.00		450.00			ERR
17	SUZUKI KAA 762E	19,221.10			450.00	315.00	19,986.10			ERR
18	SUZUKI KAA 764E	19,148.10		436.55	450.00	840.00	20,874.65			ERR
19	SUZUKI KAA 765E	13,832.45	568.50	18,845.45	450.00	2,135.00	35,831.40			ERR
20	SUZUKI KAA 767E	7,837.75	323.60	17,812.30	450.00	1,610.00	28,033.65			ERR
21	SUZUKI KAA 768E	32,386.90	924.80	12,762.00	450.00	3,430.00	49,953.70			ERR
22	SUZUKI KAA 789F	14,081.00	4,548.60	23,014.70	450.00	3,150.00	45,244.30			ERR
23	SUZUKI KAA 714X	54,073.60	436.50	10,509.60	450.00	4,077.50	69,547.20			ERR
24	SUZUKI KAA 715X				450.00		450.00			ERR
25	SUZUKI KAA 716X				450.00		450.00			ERR
26	SUZUKI KAA 717X				450.00		450.00			ERR
27	SUZUKI KAA 718X	31,190.15	4,388.60	20,623.55	450.00	2,135.00	58,787.30			ERR
28	SUZUKI KAA 719X	25,709.45	436.50	22,426.90	450.00	2,275.00	51,297.85			ERR
29	SUZUKI KAA 720X	14,963.10	1,497.10	13,327.00	450.00	1,645.00	31,882.20			ERR
30	SUZUKI KAA 721X				450.00		450.00			ERR
31	SUZUKI KAA 722X	8,422.00	480.70	13,791.90	450.00	1,680.00	24,824.60			ERR
32	SUZUKI KAA 723X	25,595.50		10,124.25	450.00	945.00	37,114.75			ERR
33	SUZUKI KAC 768N	5,146.20		55,265.85	450.00	770.00	61,632.05			ERR
34	SUZUKI KAC 769N	8,637.70	628.50	48,727.40	450.00	980.00	59,423.60			ERR
35	SUZUKI KAC 770N	5,842.20	5,288.60	17,826.20	450.00	770.00	30,177.00			ERR
36	SUZUKI KAC 771N	8,765.80	5,698.60	32,915.05	450.00	1,890.00	49,719.45			ERR
37	SUZUKI KAC 772N	14,700.60	5,471.00	9,486.70	450.00	1,645.00	31,753.30			ERR
38	SUZUKI KAC 773N	6,075.40	6,406.00	18,320.65	450.00	962.50	32,214.55			ERR
39	SUZUKI KAC 774N				450.00		450.00			ERR
40	SUZUKI KAC 775N	7,598.40		20,923.15	450.00	1,102.50	30,074.05			ERR
41	SUZUKI KAC 776N	14,603.85	6,828.20	30,050.60	450.00	1,925.00	53,857.65			ERR
42	SUZUKI KAC 778N	5,567.00	2,403.10	19,731.65	450.00	927.50	29,079.25			ERR
	TOTAL	447,647.85	59,513.70	468,056.00	18,900	44,326.75	1,038,444.30	0.00	ERR	ERR

GRAND TOTALS 5,811,087 \* 1,159,181 \* 5,580,187 \* 144,360 \* 257,875 \* 12,952,690 \* 1,073,559 \*

Table 1 Training of workshop personnel

Nº	COURSE OFFERED	DATES	PARTICIPANTS
1.	Training of water meter repairers	8.3.93 -9.4.93 4.10.93-5.11.93	12 18
2	Plant and pump mechanics' training on repair of centrifugal and submersible pumps	4.2.93-5.2.93 11.5.93-13.5.93 19.8.93-20.9.93 18.10.93-19.11.93	6 6 10 6
3	Training seminar for electricians	23.11.93-26.11.93	16
4	Training of turners		2
5	On-the-job training mechanics	2.8.93-11.10.93 4.10.93-12.93	5 5
6	Three week training course for water supply operators at WECO	5.4.93-26.5.93 4.10.93-26.10.93	18 23
7	In-house training for trainers	4.5.93-7.5.93	23
8	Training on management by results (MBR)	6.93	2
9	Seminar on electric and electronic maintenance and repair	Postponed to 1994 February/March	

Table 4 - Committee Training

Location	Type of Training	Venue	Date	Women	Men
S.Samia	Well Committee	Namuduru Chur.	6-9/7/93	13	25
E.Wanga	- " -	Mwitoti	2-6/8/93	27	20
Sihay	- " -	Sihay Sec.	3-6/8/93	49	-
E.Ugenya	- " -	Barsenge Sec.	16-20/8/93	36	26
E.Marachi	- " -	Tingolo P.Sch.	10-13/8/93	38	-
W.Wanga	- " -	Koyonzo P.Sch.	16-20/8/93	22	26
E.Marachi	- " -	Sio-port H/C	16-20/8/93	05	24
N.Ugenya	- " -	Sega Boys P.Sch.	16-20/8/93	33	-
N.Ugenya	- " -	Aboke Church	17-20/8/93	33	24
S.Wanga	- " -	Bukhaya P.Sch.	17-20/8/93	23	27
N.Wanga	- " -	Kholera P.Sch.	24-27/8/93	24	25
Cheptais	- " -	Mt.Elgon Hall	17-20/8/93	43	27
E.Isukha	Sp.Committee	Lubao P.Sch.	14-17/9/93	26	20
S.Wanga	Well Committee	Buchifi P.Sch.	7-10/9/93	27	23
N.Uholo	- " -	Ywaya P.Sch.	7-10/9/93	42	23
S.Wanga	Sp.Committee	Buchifi P.Sch.	12-15/10/93	26	24
N.Wanga	Well Committee	Mwira P.Sch.	26-30/10/93	28	34
W.Bukhayo	Sp. Committee	Matayos H/C	5-8/10/93	25	33
Sirisia	Sp. Committee	Sibumra Chur.	5-8/10/93	18	32
W.Uholo	- " -	Mauna	4-8/10/93	28	12
E.Uholo	- " -	Madungu	12-15/10/93	30	10
Ukwala	- " -	Ukwala	18-22/10/93	35	10
S.Ugenya	- " -	Sidindi	4-8/10/93	29	15
Cheptais	- " -	Chepkube Chur.	7-10/9/93	18	29
S.Wanga	Well committee	Butunge P.Sch.	16-19/11/93	30	18
N.Wanga	- " -	Emanani P.Sch.	9-12/11/93	38	22
N.Teso	- " -	Moding H/C	23-26/11/93	12	-
Ukwala	Loc.Leaders	-	23-26/11/93	-	35
Bumula	Sp.Committee	-	23-26/11/93	-	-
N.Butso	Well Committee	Shindyi P.Sch.	30/11-3/12"	21	24
N.Butso	- " -	Shilakwe P.Sch.	7-10/12/93	28	20
N.Butso	- " -	Bushiri H/C	14-17/12/93	25	19
		32	1459	832	627

Table 2 Skill Training

Location	Type of Training	Venue	Date	Women	Men
N.W.Ugenya	Pump Attendants	Inungo	26/5-4/6/93	49	-
Sihay	- " -	Sihay	10-15/6/93	40	-
E.Uholo	- " -	Sigomere	17-23/6/93	45	-
W.Uholo	- " -	Mbosie	28/6-2/7/93	32	-
S.Ugenya	- " -	Ambira	21/6-7/7/93	40	-
E.Ugenya	- " -	Baradenge	2-24/6/93	42	-
E.Bunyala	- " -	Mudembi	2-24/6/93	42	-
S.Ugenya	Sp.Attendants	Sikalame Sec.	6-12/7/93	35	-
C.Ugenya	Pump Attendants	Ambira H.Sch.	15-21/7/93	32	-
Ukwala	- " -	Ukwala Hall	12-29/7/93	66	-
E.Isukha	- " -	Kambiri Chur.	7-27/7/93	40	-
C.Kabras	Sp.Attendants	Chebwai Sec.	13-16/7/93	21	28
Kopsiro	- " -	Kopsiro camp	13-16/7/93	7	49
"	- " -	- " -	29/6-2/7/93	45	10
S.Ugenya	- " -	Sikalame Sec.	21/6-2/7/93	41	3
N.W.Uholo	- " -	Mbusie	28/6-2/7/93	42	3
Cheptais	- " -	Chesiro	17/8-3/9/93	20	2
C.Kabras	Pump attendants	ChebwayiP.Sch	21/9-3/10/93	32	-
S.Bukusu	- " -	Mateka Sch.	7-23/9/93	15	-
E.Bukhayo	- " -	Lupida P.Sch.	7-23/9/93	38	-
E.Ugenya	Sp.attendants	Luunyo S.Sch	31/8/-3/9/93	23	42
W.Marachi	- " -	Bujumba CPK	18-23/10/93	30	3
W.Kabras	Pump attendants	Shirugu P.Sch	2-19/11/93	28	-
N.Teso	Sp.attendants	Moding H/C	18-26/11/93	15	48
N.Teso	Pump attendants	Moding H/C	23/11/9/12/93	22	-
Total	Trained	attendant	1030	842	188

Table 3 Local Community Training

Location	Type of Training	Venue	Date	Women	Men
N.Marama	Site Training	Inaya Sch.	13/5/93	7	4
"	- " -	Shirakalu	14/5/93	7	5
S.Butso	- " -	Shikhuyu	18/5/93	6	5
N.Marama	- " -	Buchenya	26/5/93	6	10
E.Isukha	- " -	Lukusi	22/5/93	5	3
"	- " -	"	27/5/93	9	4
"	- " -	"	27/5/93	6	8
E.Wanga	- " -	Khabakaya	28/5/93	2	4
N.Wanga	- " -	Indanglasia	28/5/93	5	13
"	- " -	Mwira	5/6/93	8	14
"	- " -	Kholera	5/6/93	13	5
"	Sp. Training	"	24/6/93	13	6
N.Marama	- " -	Lukaka	29/6/93	5	18
Musikoma	Site training	Siritanyi	20/5/93	25	13
Kanduyi	- " -	Kanduyi	22/5/93	30	15
Kopsiro	- " -	Kopsiro	26/6/93	33	7
Total		16	314	180	134

COMMERCIAL PROGRAM PACKAGES USED IN THE PROGRAMME

WordPerfect 4.2 and 5.1	.....	Word processing
Lotus 1-2-3 R 3.1 & R 3.4	.....	Tables, calculations and graphics
Harvard Graphics 3.0	.....	Graphics
dBASE IV	.....	Databases and program development
GW BASIC	.....	Plotting program developing
GW1,...GW6	.....	Ground water analysis
Grundfos Caps	.....	Piped system calculations
GSX-86	.....	Seismic Operations
GSFSEISMO	.....	Analysis of refraction seismic
TV-menu	.....	System menu
Sidekick	.....	System file and program writing
Norton Utilities 4.5	.....	Extension utilities to DOS
PC Tools 4.0	.....	Extension utilities to DOS
Virus Scan 8.4B89	.....	Antivirus system

APPLICATIONS CREATED IN THE PROGRAMME

Water Point Register	.....	3400 boreholes, shallow wells & springs
- water points		depth, pump, yield, location, etc.
- water quality samples		
- water committees		
Development Plan	.....	up to the year 2005, sub-location level
Water Source Coverage	.....	on sub-location level, 380 sub-locations
Undeveloped Springs	.....	3300 known springs
Water Treatment Plants	.....	100 plants
- pumps		
- electrical motors		
- diesel engines		
Water Treatment Plant Rehabilitation Costs	.....	450 records, sub-location approach
Manpower System	.....	1100 persons
Population Forecast	.....	on sub-location level
Seismic interpretation	.....	for borehole siting
Cash Ledger	.....	for reporting and cost control
Invoice Control	.....	LPO's, invoices and payments
Proforma Invoicing	.....	Invoices and payments
Cost Control	.....	budgeting and reporting
Store Control Systems	.....	6700 different items
Vehicle Cost System	.....	100 FINNIDA financed vehicles & m-bikes
Well Contractor System	.....	50 subcontractors
Payroll	.....	150 KFWWSP + 200 MoWD + 30 trainees

COMPUTERS

19 desk top PCs  
3 lap top PCs

**APPENDIX 5**

**Details of New Water Points Constructed 1993 (DDA)**

Site No.	Name	District	Category
C-10184	Shikokho	Kakamega	Semi-private
C-10185	Mululu Sch.	Vihiga	Institutional
C-10186	Ukwala Catholic	Kisumu	Full cost recovery
C-10187	P. Magut	Nandi	" " "
C-10188	Pan Paper Factory	Bungoma	" " "
C-10189	Koru Girls	Kisumu	" " "
C-10584	Ramba	Siaya	Institutional
C-10585	Baraka farm	Uasin Gishu	F. C.
C-10586	Rangala Mission	Siaya	D.D.A. 100%
C-10587	Mill Hill Mission	Vihiga	D.D.A. 75%
KA-618	Namulungu Market	"	D.D.A.
C-10588	Sirungayi	Busia	D.D.A.
C-10589	Turbo Sisters	Vihiga	D.D.A. 75%
C-10590	Turbo Sisters	Vihiga	Full Cost Recovery
C-10591	Muchi Milo	Bungoma	MoLRR&WD
C-10592	Basimalwa	Busia	D.D.A. 25%
KA-617	Soy	Kakamega	Full Cost Recovery
KA-619	Lirembe	Kakamega	D.D.A. 25%
KA-620	Ondu	Kakamega	D.D.A. 25%

## APPENDIX 6

## Technical Inspection by Repairmen

MONTH	INSTALLATION	INSPECTION	REPAIRS	BREAKDOWNS	% OF EFFICIENCY
May	11	452	5	6	100%
June	10	396	-	-	-
July	16	208	20	20	100%
August	0	324	7	8	87.5%
September	8	122	15	16	93.7%
October	7	368	3	3	100%
November	17	44	5	5	100%
December	1	162	8	9	88%
Total	70	2076	63	67	94%



## Spare Part Delivery System

DISTRIBUTOR	PLACE	DISTRICT	AMOUNT FROM SALES IN KSHS.	NUMBER OF VISISTS
Mumias muslims women group	Mumias	Kakamega	15,650.00	8
Nasyanda shop	Nasyanda	Bungoma	7,710.00	8
Simon Ekeya's shop	Amukura	Busia	2,710.00	8
Omena Hardware	Funyula	Busia	3,710.00	8
Mayanja Hardware shop	Mayanja	Bungoma	4,306.00	8
Heshima Holdings Ltd	Sega	Siaya	6,253.00	8
H.M Vaghela	Kakamega	Kakamega	1,727.00	8
<b>Total</b>			<b>42,027.00</b>	<b>56</b>

**HAND PUMPS SOLD**

**APPENDIX 8**

NO	DATE	NAME	DIS.	LOCATION	VILLAGE	WELL	DEPTH	PUMP	USERS
01	07.01	B.A. SCHNEIDER	KA	N. IDAKHO	BUNGOMA	HD	UNKNOWN	MKII	FAMILY
02	11.01	S. ORINA	BS	MALABA	KHABONDI	HD	"	AF76	"
03	13.01	H.A. AGUKU	KA	KISA	MUNDOLI	HD	"	AF76	"
v4	08.01	M. SUMBA	KA	MUMIAS	KHALABA	HD	"	MKII	FAMILY
05	04.03	K.W.ROMBOSIA	KA	KABRAS	KILOBON	HD	"	AF76	"
06	02.02	D.N.NAMUTALI	BN	KIMILILI	MATILI	HD	UNKNOWN	MKII	FAMILY
07	01.03	F. KIMOKOTI	KA	KABRAS	CHEMUCHO	HD	"	AF70	"
08	05.03	T. MASIENDE	BS	S. SAMIA	BULANDA	HD	"	AF70	"
09	09.03	T. LIAMBILA	KA	SOI	NASIANDA	HD	"	AF70	"
10	10.03	WECO	KA	KAKAMEGA	UNKNOWN	-	"	MKII	DEALER
11	10.03	WECO	KA	KAKAMEGA	UNKNOWN	-	"	MKII	DEALER
12	16.03	WECO	KA	KAKAMEGA	"	-	"	MKII	DEALER
13	16.03	WECO	KA	KAKAMEGA	"	-	"	MKII	"
14	16.03	WECO	KA	KAKAMEGA	"	-	"	MKII	DEALER
15	17.03	T. LIAMBILA	KA	SOI	NASIENDA	HD	"	AF76	FAMILY
16	18.03	HESHIMA HOLDINGS	SI	SIAYA	UNKNOWN	-	UNKNOWN	MKII	DEALER
17	18.03	"	SI	SIAYA	"	-	"	MKII	DEALER
18	18.03	"	SI	SIAYA	"	-	"	MKII	DEALER
19	18.03	"	SI	SIAYA	"	-	"	MKII	DEALER
20	18.03	"	SI	SIAYA	"	-	"	MKII	DEALER
21	26.03	S. CHITECHI	KA	E. WANGA	MORANI	HD	UNKNOWN	AF76	FAMILY
22	05.04	P.M. MAINA	KA	W. KABRAS	UNKNOWN	HD	"	AF76	FAMILY
23	04.04	G. NANDI	KA	W. KABRAS	UNKNOWN	HD	"	AF76	FAMILY
24	14.04	E. OMINDE	KA	KHWISERO	KHWISERO	HD	"	AF76	FAMILY
25	19.04	M. SONGORO	KA	S. BUTSOTSO	BUKURA	HD	"	MKII	FAMILY
26	25.05	H. GIMOI	KA	C. KABRAS	CHEKULO	HD	13.0	MKII	10
27	21.05	J. MUDANYA	KA	MUMIAS	ESHISIRU	HD	15.0	MKII	FAMILY
28	27.05	J. CHUNGE	KA	E. WANGA	ISANGO	HD	15.0	MKII	20
29	02.06	W. SIRENGO	BN	MUSIKOMA	KANDUI	HD	20.0	MKII	20
30	05.07	D. ERAMBO	KA	KISA	MALINDI	HD	28.5	MKII	50
31	07.07	N. NAMUYANGWA	VI	BANJA	KAPSODOI	HD	15.0	AF76	FAMILY
32	22.07	P.S. KONDOLE	KA	TURBO	MURGUSI	HD	43.0	MKII	100
33	04.08	D. OTIENO	KA	MUMIAS	IMANGA	HD	15.0	AF76	FAMILY
34	09.08	L.W. JACKSON	KA	UNKNOWN	UNKNOWN		UNKNOWN	AF76	FAMILY

KEY: KA - KAKAMEGA,

BN - BUNGOMA,

BS - BUSIA,

SI - SIAYA

**PRIVATE WELLS DEVELOPMENT - 1993**

NO	DATE	NAME	DIS.	LOCATION	VILLAGE	WELL	DEPTH	PUMP	USERS
35	09.08	K. MBUMILE	VI	LIDAVALLIA	MAHANGA	HD	18.0	MKII	20
36	19.08	S. LUCHIVIA	KA	KABRAS	INGAVIRA	HD	7.0	AF76	FAMILY
37	24.05	J.M. MUNALA	KA	CHEVYUS	LUMANI	HD	16.5	MKII	FAMILY
38	31.08	E. JUMA	KA	S. KABRAS	LUTALI	HD	9.6	AF76	FAMILY
39	02.09	B. MUNYENDO	KA	E. WANGA	BUMINI	HD	15.0	AF76	FAMILY
40	07.09	H. LOKORITO	BN	WEBUYE	MATULO	HD	18.1	MKII	FAMILY
41	07.09	B. MULALU	BN	NDIVISI	NDIVISI	HD	15.0	MKII	FAMILY
42	13.09	G.O. MAIGA	KA	UNKNOWN	UNKNOWN	HD	15.0	MKII	FAMILY
43	30.08	S.O. INJAMU	KA	N.WANGA	EKEMA	HD	UNKNOWN	MKII	FAMILY
44	13.09	J.A. KUSIMBA	KA	S.WANGA	LUBARI	HD	12.0	MKII	30
45	16.09	SMITHS	KA	MALAVA	CHEGULO	HD	15.0	MKII	10
46	24.09	C. ODANGA	BS	C.BUKHAYO	ISEKA	HD	12.0	MKII	10
47	27.09	E. AHOLI	KA	SHIKUNGA	MARENYA	HD	12.0	MKII	FAMILY
48	27.09	M. MUNZALA	KA	IDAKHO	SHIKUMU	HD	18.0	MKII	FAMILY
49	27.05	M. MUKODA	KA	LUMAKANDA	MUNYIKE	HD	12.0	MKII	7
50	29.09	G. CHITIAVI	KA	S. KABRAS	MUTINGONGO	HD	12.0	AF76	FAMILY
51	18.09	J. KOLA	KA	S. BUTSOTSO	EMULIERE	HD	13.5	MKII	12
52	12.10	P.MASAKHALIA	KA	BUNYALA	NAMUNDERA	HD	19.0	MKII	272
53	12.10	N. NGAMBO	KA	S. BUTSOTSO	EMULIERE	HD	13.5	MKII	FAMILY
54	18.10	E. MWAIZALA	KA	S. IDAKHO	IMALABA	HD	18.0	MKII	18
55	18.10	J. MUKUNAMU	KA	ISUKHA	SHIKONDI	HD	18.0	MKII	20
56	18.10	M. MUKODO	KA	LUMAKANDA	MUNUUKI	HD	18.0	MKII	20
57	18.10	M. MWANZALA	KA	N. IDAKHO	SHIKUMU	HD	18.0	MKII	15
58	18.10	A. OLUOCH	KA	S. KABRAS	SHIANDA	HD	12.5	AF76	FAMILY
59	29.10	M. MUNZALA	KA	IDAKHO	SHIBUNAME	HD	18.0	MKII	1000
60	10.11	G. OPAKI	KA	E. WANGA	KHAUNGA	HD	23.0	MKII	120
61	16.11	S. IMBWAGA	KA	E. ISUKHA	VIREMBE	HD	14.2	MKII	FAMILY
62	02.11	B. OKOTHE	KA	SOY	NASIANDA	HD	10.0	MKII	20
63	19.11	HESHIMA HOLD.	SI	SIAYA	UNKNOWN	HD	UNKNOWN	MKII	DEALER
64	09.12	F. NASHIBWEDE	BN	BUNGOMA	BUNGOMA	HD	17.7	MKII	FAMILY
65	10.12	F. ETAKWA	KA	N. BUTSOTSO	MULUANDA	HD	11.0	AF76	FAMILY
66	06.12	F. JUMA	BS	NAMBALE	MAKONGENI	HD	11.0	MKII	20
67	20.12	H. SHIUNWA	KA	N. BUTSOTSO	EMATHA	HD	13.0	AF76	FAMILY
68	29.12	A. BUSIEGA	KA	W. KABRAS	MALAVA	HD	16.0	MKII	FAMILY

KEY: KA - KAKAMEGA,

BN - BUNGOMA,

BS - BUSIA,

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**TECHNICAL DETAILS OF PIPED WATER SUPPLIES**

NAME & LOCATION OF WATER SUPPLY	AREA (KM <sup>2</sup> )	POPULATION SERVED	CAPACITY M <sup>3</sup> /D	SOURCE YIELD M <sup>3</sup> /HR	SCOPE OF WORKS
<p>4.3b <u>Community Schemes</u></p> <p>Kambiri Water Supply - Kakamega District</p>	30	13,000	600	River 25M <sup>3</sup> /hr	<ul style="list-style-type: none"> <li>- Construction of river intake works</li> <li>- Construction of 3No. 100m<sup>3</sup> storage tanks</li> <li>- Construction of 5No. BPTs</li> <li>- Construction of 15 km pipeline</li> <li>- Construction of 15No. water kiosks and and 5No. communal water tanks.</li> </ul>
<p>4.3c Water supplies carried forward from Phase III</p> <p>1. Soy Water Project- Kakamega District</p>	80	12,000	600	River Sergoit	<p>Construction of the following:</p> <ul style="list-style-type: none"> <li>- 15M<sup>3</sup>hr capacity composite filtration unit.</li> <li>- 50M<sup>3</sup> clear water sump</li> <li>- Pump house</li> <li>- Installation of 2 No highlift and 1No lowlift pumps.</li> <li>- Intake weir</li> <li>- Laying of 500mm gravity pipeline</li> <li>- Laying of 15Km distribution pipeline</li> <li>- Rehabilitation of existing pipeline</li> </ul>
<p>2. Chavavo-Mahanga W/S Vihiga District</p>	25	7000	400	Springs 12m <sup>3</sup> (hr	<p>Construction of the following</p> <ul style="list-style-type: none"> <li>- 3No spring protections</li> <li>- Laying of 1Km of 63mm gravity</li> <li>- Rehabilitation of existing pipelines</li> <li>- Rehabilitation of 90M<sup>3</sup> ground masonry tank</li> </ul>

NAME & LOCATION OF WATER SUPPLY	AREA (KM <sup>2</sup> )	POPULATION SERVED	CAPACITY M <sup>3</sup> /D	SOURCE YIELD M <sup>3</sup> /HR	SCOPE OF WORKS
Muchi-Milo Water Project Bungoma District	45	20,000	180	8.8	<ul style="list-style-type: none"> <li>- Drilling of 1No.borehole</li> <li>- Construction of 1No power house</li> <li>- Installation of submersible pump</li> <li>- Fencing</li> <li>- Laying of 200m pipeline to connect to the existing Milo pipeline</li> <li>- Electrification and installation of electrical switch gear.</li> </ul>

NAME & LOCATION OF WATER SUPPLY	AREA (KM <sup>2</sup> )	POPULATION SERVED	CAPACITY M <sup>3</sup> /D	SOURCE YIELD M <sup>3</sup> /HR	SCOPE OF WORKS
<u>Full Cost Recovery Project</u> Maseno University borehole Water Supply	3	7,328	600	2No. b/h	-Installation of 2No. Submersible pump.  Construction of the following works:  -Pump house -2No. borehole chambers -Fencing works -Installation of 450m of 63mm $\phi$ rising main Electrification all the switch gears.
Kibos School for the Blind Borehole Water Supply.		657	36	1No. B/H 10M <sup>3</sup> /hr	Installation of 10m <sup>3</sup> elevated tank.  - Submersible pump installation - Power house construction - 5No vavle chamber construction - Trenching works - Rehabilitation of 650m of existing pipeline size 63mm - Laying of 350m of new pipeline

NAME & LOCATION OF WATER SUPPLY	AREA (KM <sup>2</sup> )	POPULATION SERVED	CAPACITY M <sup>3</sup> /D	SCOPE OF WORKS
<u>Minor Rehabilitation Works</u> Bungoma boreholes Rehabilitation Bungoma district	-	1000	320	Construction of the following - Power house - Installation of 2No. submersible pumps - Fencing - Connection to the existing pipelines - Installation of electrical switchgear
Busia Showground W/S Busia District	-	8000	400	- Construction of 1No power house - Installation of 1No solar submersible pump - Installation of electrical solar modules and switch gears. - Rehabilitation of elevated tank. - Connection to the community pipeline
Madzuu Infiltration Well Vihiga District	0.5	800	24	- Construction of 10m deep well - Well laying of radial 4No infiltration pipes.

		JAN-JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN-DEC	% USED TO DATE	TOTAL LEFT
FIM rate:			0.0731	0.0773	0.0800	0.0832	0.0849	0.0852			
01	ADMINISTRATION	budget	88,400.00	44,200.00	44,200.00	44,200.00	44,200.00	44,200.00	353,600.00		
	B: 353,600.00	actual	63,018.91	52,211.51	43,866.70	24,683.77	22,373.50	25,876.81	285,580.25	80.8%	68,019.75
02	PLANNING & DESIGN	budget	59,800.00	31,700.00	41,100.00	30,600.00	40,600.00	32,700.00	270,500.00		
	B: 270,500.00	actual	39,870.56	24,366.67	67,414.62	35,465.71	41,063.72	41,648.09	367,139.89	135.7%	-96,639.89
03	CONSTRUCTION	budget	588,300.00	323,800.00	265,800.00	262,800.00	234,300.00	260,300.00	2,208,000.00		
	B: 2,208,000.00	actual	332,059.13	356,209.36	396,015.75	255,105.45	200,506.77	320,715.17	2,325,787.02	105.3%	-117,787.02
04	OPERATION & MAINTENANCE	budget	318,200.00	171,700.00	633,700.00	77,200.00	63,200.00	32,200.00	1,325,600.00		
	B: 1,325,600.00	actual	45,544.58	94,332.43	280,808.87	147,366.00	196,755.18	126,594.60	1,516,608.45	114.4%	-191,008.45
05	COMMUNITY PARTICIPATION	budget	91,500.00	48,000.00	45,500.00	51,000.00	50,500.00	48,000.00	392,000.00		
	B: 392,000.00	actual	84,086.66	55,771.70	56,022.30	48,534.29	53,310.00	68,008.45	443,302.07	113.1%	-51,302.07
07	INDIRECT COSTS	budget	31,000.00	29,000.00	33,000.00	3,000.00	38,000.00	28,000.00	190,000.00		
	B: 190,000.00	actual	13,211.52	10,467.78	5,882.84	111,220.48	106,333.20	26,041.17	293,880.14	154.7%	-103,880.14
08	TECHNICAL ASSISTANCE	budget	620,000.00	252,500.00	312,000.00	233,500.00	287,000.00	275,000.00	2,268,500.00		
	B: 2,268,500.00	actual	592,105.83	170,819.21	324,966.26	282,239.60	275,000.00	344,736.52	2,233,242.42	98.4%	35,257.58
	=====										
	7,008,200.00	budget	1,797,200.00	900,900.00	1,375,300.00	702,300.00	757,800.00	720,400.00	7,008,200.00		
		actual	1,169,897.19	764,178.66	1,174,977.34	904,615.30	895,342.37	953,620.81	7,465,540.24	106.5%	-457,340.24
	EQUIVALENT IN KES	actual	14,232,325.90	10,453,880.40	15,200,224.30	11,307,691.30	10,761,326.60	11,232,282.80	18,813,480.90		