

# **MCHINJI COMIC RELIEF WATER PROJECT**

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## **ANNUAL REPORT**

**APRIL 1995 TO SEPTEMBER 1995**

## EXECUTIVE SUMMARY

*This report highlights progress made for Phase II of the Mchinji Water Project since April, 1995. It also explains problems encountered and the lessons that have been learnt during the period.*

*The broad objective of the project is to promote community participation in the identification of their needs for safe water sources, the drilling and rehabilitation of their water points and the eventual community based management in the operation and maintenance by encouraging women participation.*

*This report is therefore a consolidation of the main issues from the hardware and the software components for the past 6 months. It should be mentioned that the targets that were set were supposed to be met by March, 1996.*

Tables, appendices and graphs have been included for reference purposes.

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## **BACKGROUND INFORMATION**

The Mchinji Water Project is a component of the Mchinji Primary Health Care Programme. The water project started in October, 1993 and covers the construction of tubewells using a Vonder rig, rehabilitation of boreholes with NON-VLOM pumps and implementation of community based management in all the beneficiary communities. In simple terms the project is run in two sub-components, i.e. construction of water points and community based management training sessions.

The broad objective of the construction component of the water points is to provide safe drinking water to the rural communities within reasonable walking distances. This in turn will alleviate the burden on the women to spend a lot of time fetching water and improve the health standard of children by through the reduction in incidences of the water borne diseases. On the other hand the hardware component is complimented with community based management training sessions to ensure the sustainability and reliability of the water points because the communities will be able to maintain and care for these water points.

## CONSTRUCTION COMPONENT

### 1. OVERVIEW OF THE CONSTRUCTION COMPONENT

Despite the persistent drought from 1992 to date which has greatly affected water sources in the whole of Southern Africa, the water table in Mchinji has remained relatively higher than most of the districts in Malawi. The water table varies between 6 and 10 metres and this fact has led to the success of the drilling activity.

The demand for tubewells has increased to an extent where some communities feel that their turn to drill their water points is taking too long to come. The major problem has been the presence of semi-decomposed rock at a depth of between 10 and 15 metres. This coupled with difficult soil formation where hard clay is experienced resulted in the abandonment of some sites after drilling for a few days.

In general terms, the drilling of tubewells has been preferred to construction of hand-dug shallow wells due to its reliability and the quality of drinking water obtained from these sources.

### 2. PROGRESS AGAINST WORK PLANS FOR PHASE II<sup>1</sup>

The achievements have been looked at in terms of progress made against work plans as follows:

	WORK PLAN	PROGRESS ACHIEVED
1.	Drill 30 tubewells	Drilled 12 tubewells
2.	Rehabilitate 20 boreholes	Rehabilitated 24 boreholes
3.	Monitor the functioning of the tubewells and boreholes	Monitored and maintained most of the water points where local communities have not been trained in CBM

From the table above it can be seen that only a 40% success rate has been attained in tubewell construction. This has been due to the following problems which were encountered in the six months:

- A. Frequent breakdown of the rig when trying to drill deeper through a semi-decomposed rock. To make tubewells more reliable it is necessary to drill at least to 15 metres so that a water column of more than 5 metres can be obtained.
- B. Other rig repairs have resulted in long delays due to the unavailability of the

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<sup>1</sup> See Graph 1 Monthly Progress on Borehole Rehabilitation and Tubewell Construction.

required spare parts in the country.

- C. Tubewell drilling requires community participation which means that every time the community concerned is otherwise occupied, e.g. during funerals, drilling is disrupted.
- D. The deterioration of the security situation in Mchinji led to the temporary suspension of project activities for long periods.

On the other hand, the rehabilitation of boreholes with NON-VLOM pumps has been very successful. A 120% success rate had been attained even before the end of the second phase of the project mainly because of the following reasons:

- A. Most of the sites were easily accessible
- B. Good cooperation between the communities and the rehabilitation team
- C. Availability of most of the resources required during the rehabilitation process.

Water point monitoring in terms of pump function has also been done at some borehole and tubewell sites in order to ensure that the water sources are.

### 3. **WORK PLANS FOR THE COMING PERIOD**

While the project activities continue with drilling and borehole rehabilitation, a few other activities will be done during the coming period which will include:

- A. Field assessment of more boreholes which require to be rehabilitated. This exercise will help the fund to implement a district-wide community based management initiative without community conflicts due to other boreholes falling under the government's centralised maintenance system. This assessment will also include the identification of the communities which cannot be served with tubewells due to vonder rig failure resulting from difficult soil formations. This will help SCF to prepare and submit a proposal for funding to the donor to include air rig drilling.
- B. Monitoring of ground water recession rates resulting from the persistent drought that has been hitting Malawi since 1992. The information obtained will help SCF to plan the reliable drilling depth of its water points which will not be affected by dry spells.

#### 4. LESSONS LEARNT

- A. Monitoring of the civil works has revealed that short reinforcing bar laps between the apron and the drainage lead to the breaking of concrete at the apron-drainage joint. This will be checked by providing a lap length of not less than 0.5 m.
- B. It has also been observed that critical analysis of the existing water points and some ground features would enable to reduce the incidence of site abandonment. The traditional methods used in site survey for tubewells do not provide information on:
  - i. quantity of underground water
  - ii. depth of water level
  - iii. soil formation.
- C. The participation of communities in the drilling process depends to a large extent on the level of community involvement in problem identification and decision making on the course of action to be taken to address the problem. In line with this, it has been noted that community mobilisation does not just involve telling the communities what will be done and how--community mobilisation is in fact a process of lobbying the community to organise themselves for their involvement and participation in project activities.

## **COMMUNITY BASED MANAGEMENT**

### **1. OVERALL AIM**

The overall aim of the CBM component is to implement a district- wide community based management and hygiene education in all the beneficiary communities served with AFRIDEV boreholes with the objective of enhancing the prospects of sustainability and maximising the use and effectiveness of the supplies thereby improving the health of the user population.

### **2. SPECIFIC OBJECTIVES**

- A. To train 172 borehole committees in leadership skills, committee procedure, financial management and hygiene education.
- B. To train 516 caretakers from 172 committees in repair and maintenance of an Afridev pump.
- C. To implement hygiene education and sanitation promotion in thirty villages, i.e. 15 intervention and 15 control villages.
- D. To set up a spare part distribution system through Chipiku Stores.
- E. To encourage women participation in management of their own water resources.

### **3. PROGRESS AGAINST OBJECTIVES**

#### **A. FORMATION AND TRAINING OF COMMITTEE MEMBERS**

As part of the development of the project, eighty four (84) borehole committees were formed and trained in leadership skills, committee procedure, fund raising, financial management and hygiene education of which only 41 have received caretaker training . The borehole committees are responsible for the management of the borehole while the caretaker members receive technical training which enables them to carry out basic preventive maintenance and simple repairs.

Each caretaker committee comprises three people of whom two are women. Leadership training for 88 committees remains to be conducted while 131 caretaker committees need to be trained by March, 1996.

Committee formation and training was conducted by the multisectoral teams of trained extension workers from the Ministries of Health, Irrigation and Water Development, and Women and Children Affairs and Community Services . These extension workers have formed local coordinating teams which are responsible for implementation of the project activities in their respective catchment areas

with support from the District CBM Team of which SCF is a member. After training the communities, the extension workers are responsible for follow up activities which build up chances for the sustainability of the project activities. The extension workers also assist the communities in problem solving in case of conflicts or misunderstanding between the committee members or when there are technical problems with the borehole which are beyond the knowledge of the committee.

Since this is an ongoing project, it is hoped that the majority of the committees will have been trained by the end of March, 1996.

## **B. HYGIENE EDUCATION AND SANITATION PROMOTION**

In order to achieve lasting benefits of the installed water points, 30 villages were selected for intensive hygiene education and sanitation promotion, i.e. 15 intervention and 15 control villages. It is the fund's principle to be able to learn from experience hence the lessons learned from the intervention villages will be applied where appropriate in the remaining villages for a wider coverage.

The hygiene and sanitation activities will be closely monitored and the information that will be obtained will be analysed to evaluate the effectiveness of the HESP interventions in the communities. This evaluation will focus on the water hygiene behaviours in terms of storage of drinking water, sanitation coverage of the villages, and the water quality results during collection and storage to be determined by bacteriological analysis of the water samples both from the intervention and control villages. Data will be presented in terms of coliform counts per 100ml of water and interpreted using the WHO standards for safe drinking water.

The criteria which were used in selecting the villages were the willingness and confidence the communities had in participating in HESP activities. The activities which have so far been carried out are:

- i. Water sampling for microbiological quality analysis to provide baseline data of the water quality before HESP interventions and the Knowledge, Attitude and Practice (KAP) survey to determine the hygiene practices in the communities. The information collected provided baseline data to enable SCF to identify problem areas related to water hygiene and plan appropriate hygiene education messages for intervention in the communities. The information also helped the fund to determine the specific hygiene related behaviours that must be changed in order to maintain the quality of water from safe water points.
- ii. Development of water hygiene education messages.
- iii. Training of 166 volunteers who are working in 15 intervention villages



of which 80 are women. These volunteers will be responsible for the dissemination of hygiene education messages in their communities.

The results of the water quality survey conducted in 30 villages using samples collected from 39 boreholes revealed that 78% of these water sources had the WHO<sup>2</sup> acceptable level. This means that considerable deterioration occurred during transportation and storage. In general, water became grossly contaminated once stored at home.

The studies provided the basis for determining the hygiene behaviours which must be changed during intensive hygiene education. Basing on the results of the survey, water hygiene messages were developed aimed at changing incorrect practices and behaviours at the water source, during transportation and storage.

The period which was set for hygiene education needs to be extended by at least six months to enable the completion of all the necessary activities. Changing behaviour is not always easy--there is need to understand local behaviours, cultural practices and involve people at various levels of society.

At the moment some activities which were supposed to have been carried out like san plat casting and theatre for development have not been done.

### **C. SPARE PART DISTRIBUTION SYSTEM**

The project has introduced the sale of AFRIDEV spare parts in Chipiku Stores, a local wholesaler with reliable distribution centres throughout the country, which will in turn sell the spare parts to local shopkeepers. Agreements were reached with 3 Chipiku stores in July 1995 following which 50 sets of fast wearing spare parts were delivered to each of the stores. The money realised from sales of these spare parts will be deposited into the Community Based Management Revolving Fund. An account of the Fund has been opened with the National Bank of Malawi.

In addition 15 local shopkeepers were identified and are now buying the spare parts from Chipiku stores and stocking them in their shops. As the systems expands, spare parts will be easily accessible to communities that need them.

While using the Mchinji Project as a pilot project, SCF through its National Advisor to the CBM Unit is influencing the government to distribute the borehole spare parts through Chipiku Stores throughout the country to support the borehole committees which were trained in the past three years but do not yet have access to spare parts. The government has only made available few spare parts to Chipiku Stores especially in the Southern Region. Meanwhile, the Water

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<sup>2</sup>The WHO guideline for acceptable level for rural untreated water is <10 *Faecal thermotolerant coliform* per 100ml

department is planning to order a large consignment of spare parts for distribution throughout the country.

**D. WATER POINTS IN OPERATION AND PUMP REPAIRS DONE**

Water point monitoring was done to determine the efficiency of the project which can be measured by:

- i. the number of pumps which are operational at any given time
- ii. whether or not the committees have maintenance funds with which to be buying the required spare parts
- iii. the ability of the caretakers to undertake preventive maintenance.

TABLE 1. Percentage Performance of 73 Boreholes Monitored in Phases I and II

FEATURE	PERCENTAGE
Boreholes working well	91
Boreholes working poorly	9
Committees that have maintenance fund	53
Committees that have bought spare parts	40
Caretakers committees that have done repairs and preventive maintenance	49

Looking at the table above, it is evident that only 53% of the committees have maintenance funds. This rate will take time to be improved because committees generally need a lot of time to sit down with their communities to map out ways of raising funds.

It should also be mentioned that this is an on-going project where the number of committees trained will continue to increase.

#### 4. LESSONS LEARNT

- A. Bacteriological water quality monitoring revealed that provision of safe water alone is not enough. Provision of safe water should be combined with a HESP component and HESP should address the specific areas of concern.
- B. A HESP component may be more effective if delivered after a CBM programme since communities are more likely to be receptive once their confidence has been gained and relationships between communities and extension workers have been established.
- C. The success of the CBM programme depends on effective community awareness and training followed by the availability of tools and spare parts to be used for maintenance of the water points backed by a well established support unit for major repairs of the boreholes.
- D. The strength of the CBM community depends on the local bye-laws set aside by the community to establish control on the usage of the water points. In certain communities, a fine is charged for anyone violating the laws.

## 5. PROBLEMS ENCOUNTERED

- A. The security situation in the district has been poor due to armed robberies. Project activities in villages close to the border with Zambia were suspended and this has affected the pace of the project.
- B. The high rate of *per diem* being offered by the UNDP Fifth Country Programme to government extension workers, local leaders and the communities in Mchinji has affected our working relationship with extension workers and to a lesser extent the communities and their leaders because SCF does not offer the same rates. SCF however, continues to liaise with the extension workers to consider the value of their involvement in assisting the communities in their catchment areas as a fundamental principle. As for the local leaders and the communities SCF advocates the long term value of the training to the communities which is generally accepted as opposed to more money for per diem.

## 6. BUDGET

The budget for Phase II covered several line items such as construction of an office and housing, mid-term evaluation and the casting of sanplats which have not been implemented according to plan because of the following reasons:

- A. Construction of an office has been delayed by the move of the Water Department from the Ministry of Works to the Ministry of Irrigation and Water Development. The Water Department staff in Mchinji are still based in the Ministry of Works premises but are supposed to move to their own but as yet unknown place. This means that the office will not be constructed until SCF has been officially told of the new premises.

House construction will not be implemented because there are houses available for staff now that the Malawi Railways has almost stopped its operations in Mchinji District due to the dwindling market demand resulting to staff redundancies hence several houses were made vacant. It would be very important that the budget which was allocated for house construction be used for providing more water points or more community training.

- B. The other project activities did not start as planned because of the security problem.

**7. FUTURE PLANS**

- A. To train 88 borehole committees in leadership skills, fund raising activities, committee procedure and hygiene education.
- B. To train the remaining caretakers members from 131 committees in repair and maintenance of Afridev pump.
- C. To continue monitoring water quality every three months to assess the impact of hygiene education.
- D. To start casting san plats beginning with the villages selected for intensive water hygiene education.
- E. To initiate water hygiene lessons for primary school children.

## CONCLUSION

In general the construction and community based management components of the project are not very behind schedule. The findings of the monitoring exercise which was carried out showed that 91% of the water points are working properly at each given time and that the communities have demonstrated a sense of ownership of the water points as demonstrated by the willingness of some communities to raise funds and purchase spares.

Because a lot of time is currently being lost in changing drilling sites due to problems with hard rock, more time will be required for drilling and construction of tubewells to meet the intended target. It is most likely that the majority of the work will have been covered by March 1996 but follow up with committee training will not be possible within the Phase II period because a committee is formed only after a successful hole has been drilled.

The approach which has been used for the project is widely accepted at all levels; community, district and national level such that the National CBM Unit is using the project's approach to develop guidelines for implementation of CBM so that it is replicated to other districts.

The strength of the fund is the ability to learn from experience. The experience gained from the Mchinji Water Project is being used to implement similar projects in the country. The project has also been used as a training ground for the vonder and rehabilitation teams by other organisations like Concern Universal and Inter Aide. Shortly in May the fund trained its own teams in Mchinji for the ODA funded drought project in Salima District where vonder drilling and borehole rehabilitation is being done.

An extension of the Phase II period to December 1996 would be the best way to implement community based management in a systematic manner. This would also enable good planning for Phase III. SCF would effectively implement the project activities during an extended period using the same budget for Phase II. The budget line for house construction would offset some of the expenses to be incurred during this extended period.