

**D F I D C A**

**RURAL WATER-POINT UPGRADING AND  
REHABILITATION PROJECT**

**IN**

**MATABELELAND NORTH AND MASVINGO  
PROVINCES**

**FINAL PROJECT PROGRESS REPORT**

**February 2001**

**Submitted by**

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## **LIST OF ABBREVIATIONS**

<b>Agritex</b>	<b>Agricultural Extension Worker</b>
<b>A.H.E.A.D.</b>	<b>Applied Health Education and Development</b>
<b>CBM</b>	<b>Community Based Maintenance</b>
<b>CBMM</b>	<b>Community Based Maintenance and Management</b>
<b>CHC</b>	<b>Community Health Club</b>
<b>DDF</b>	<b>District Development Fund</b>
<b>EHT</b>	<b>Environmental Health Technician</b>
<b>MNAECC</b>	<b>Ministry of National Affairs, Employment Creation and Co-operatives</b>
<b>MoHCW</b>	<b>Ministry of Health and Child Welfare (MoH)</b>
<b>NGO</b>	<b>Non Governmental Organisation</b>
<b>PRA</b>	<b>Participatory Rural Appraisal</b>
<b>RDC</b>	<b>Rural District Council</b>
<b>RfH</b>	<b>Riders for Health Organisation</b>
<b>VCW</b>	<b>Village Community Worker</b>
<b>WPC</b>	<b>Water Point Committee</b>
<b>VPM</b>	<b>Village Pump Mechanic</b>
<b>SDC</b>	<b>School Development Committee</b>
<b>WEDC</b>	<b>Water Engineering and Development Centre</b>
<b>WWSSC</b>	<b>Ward Water and Sanitation Sub Committee</b>
<b>VWSSC</b>	<b>Village Water and Sanitation Sub Committee</b>
<b>IG</b>	<b>Income Generation</b>

## **1. EXECUTIVE SUMMARY**

This Final Project Progress Report sets out to highlight the achievements of this three-year "Pilot Project". Some effort is given to providing a certain amount of background information to the project as well as to why and how certain aspects of the project came about. This is to enable those who have not been involved with the project until now to have a better understanding of the overall "process" and thus gain a better perspective of the project, its Activities and Outcomes.

## **2. BACKGROUND TO PROJECT**

### **2.1 Project Proposal**

In September 1996, the Senior Engineering Adviser to DFIDCA, the late Robin Cadwallader, requested the consultant to develop a project proposal in support of drought-prone Matabeleland North and Masvingo Provinces. This was on the strength of the consultant's work for WaterAid in 1992/93, when he had been responsible for the drought mitigation project in Bikita district, which was funded by DFID, and which was subsequently reported on by ODI.

At that time the consultant was concluding his four-year secondment from WaterAid as the co-founder and Executive Director of Mvuramanzi Trust. This NGO, established in 1993, had pioneered a number of new approaches in support of the WatSan sector which included the Upgraded Family Well; the extractable "user-friendly" version of the Zimbabwe Bush Pump and various designs for low-cost sanitation and hand-washing facilities.

In 1997 the consultant prepared the proposal for this project in consultation with DFIDCA, the Co-ordinator of the NCU, Mr George Nhunhama, the Provincial Administrators of Matabeleland North and Masvingo provinces as well as the DAs and CEOs of Tsholotsho in Matabeleland North and Gutu in Masvingo, which were the districts chosen to implement this project.

Three Wards in Tsholotsho and four Wards in Gutu were identified in which to implement this pilot project with the expectation that if positive results were achieved then a much larger project might eventually follow on. It was also appreciated that any useful experiences, appropriate technologies or approaches that were developed under this pilot phase should be fed back to the two much larger IRWSS projects that DFID was concurrently funding in Bikita and Lupane districts as well as to the WatSan Sector at large through the NCU.

By December 1997 the Project Memorandum was finally completed under the title: "Rural Water-Point Upgrading and Rehabilitation Project for Matabeleland North and Masvingo Provinces.

A two-year Contract (from March 1998 to February 2000) was subsequently agreed between DFIDCA and Zimbabwe AHEAD Organisation to support implementation of the project through the respective RDCs. Later, a no-cost, one-year extension postponed the Completion Date to 28<sup>th</sup> February 2001. Hence this Final Progress Report after three years of project implementation.

## **2.2 Selection of Zimbabwe AHEAD Organisation**

Zimbabwe AHEAD Organisation was selected to facilitate the implementation of the project because this NGO had been formed on the strength of successfully pioneering the Community Health Club (CHC) approach for sustainable project implementation in water and sanitation projects. The idea that water and sanitation implementation should occur only *after* beneficiaries had completed a health education programme, (through the establishment of Community Health Clubs), was a new approach which had already proven to be most effective in Makoni District.

Zimbabwe AHEAD was selected to facilitate this Pilot Project, not only because of the Community Health Club approach that it had developed, but also because it was felt that this NGO was in a strong position to undertake research and development into a range of appropriate innovative WatSan technologies. As discussed below, these were to include the development of an extractable hand-pump capable of operating at depths of up to 120 meters deep; and to undertake research into low-cost latrine construction techniques in Kalahari sands.

It was understood that as this was defined as a “two-year pilot project” being implemented through an NGO in a small number of selected Wards, there should be certain flexibility in the technologies and approaches employed. The NCU were strongly in support of this concept and readily agreed that any new ideas could be tried out which would not necessarily have to receive the blessing of respective GoZ Ministries beforehand. This was certainly welcomed by the technical team working at ZimAHEAD, as they were able to investigate and experiment with quite a wide range of different technological options as will be discussed below.

## **2.3 Expansion of Zimbabwe AHEAD**

The present director of ZimAHEAD had undertaken training activities as a consultant on behalf of UNDP, WHO, ILO, UNICEF, DFID, WaterAid and Oak Foundation. However, by early 1998 with the increasing demand for the Community Health Club strategy to be implemented on a larger scale Zimbabwe A.H.E.A.D was established as an NGO. This was facilitated once substantial funding was secured from two major donors, DFID and Danida. Two large three-year projects were started: this project in Gutu and Tsholotsho (DFID) and another in Makoni (Danida). As such the capacity of the organisation was able to expand rapidly.

Whilst Danida donated 14 motorbikes, a 15 tonne truck and a 4WD vehicle to ZimAHEAD directly, DFID made available three 4WD vehicles, a 15 tonne truck and 7 motorcycles, all of which are still registered under BHC. In addition the organisation established a well-equipped head-office which has enabled the production of high quality training materials. This material support has enabled the Organisation to be extremely effective in the implementation of the two Programmes.

### **3 PROGRESS AGAINST LOGFRAME**

This is detailed on the following progress monitoring sheets at ACTIVITY and OUTPUT levels.

**GOAL:** *“To improve the health status and quality of life of the rural population in the target areas of Gutu and Tsholotsho”.*

**PURPOSE:** *“Improved access by the target population to safe and sustainable water, sanitation and associated health benefits”.*

## **4. REHABILITATE & UPGRADE WATER POINTS**

**4.1 “Develop extractable hand-pumps capable of operating at depths of up to 120m (Logframe Activity No.1)”**

### **4.1.1 Background:**

One of the greatest challenges of the project has been to develop a more convenient and robust hand-pump, which the local communities can maintain themselves, without having to rely on DDF to come to their assistance. In Tsholotsho this was particularly difficult because water in this district is pumped from considerable depths.

As from 1<sup>st</sup> January 2001 DDF staff have been completely disbanded in Tsholotsho district. This is the case in many other districts of Zimbabwe today. Gutu only has the Field Officer, in place as the rest of his staff have already dispersed.

With DDF becoming defunct it is even more imperative that a ‘Village Level Operation and Maintenance’ handpump becomes the norm in the rural areas of Zimbabwe. Most VLOM pumps on the international market today can only pump from a maximum of about 40 meters deep (e.g. the India Mk III and the Afridev handpumps).

The challenge to come up with improvements to the extractable version of the ‘B’ type Bush Pump has been met within this project thanks to close collaboration between ZimAHEAD and the manufacturer of the pump, V&W Engineering. The handpump now in operation can extract water from depths up to 120 meters deep (**i.e. three-times more than the maximum depth considered viable for most international VLOM type hand-pumps**), and yet at the same time retain the proven “user friendly” characteristic that

ensures that local communities can maintain the pumps themselves under a CBM regime. (Refer **Appendix 1** for details of modifications carried out to the pump under this project).

#### **4.1.2 Progress To-date:**

The early results from the research and development into extractable hand-pumps capable of operating at depths of up to 120m are very positive:

**Of 132 pumps in Tsholotsho, over 50% are at settings greater than 80 meters and some are as deep as 120m. All pumps are fully extractable and suitable for CBM.**

Every WP, which is at a depth greater than 30 meters, has been fitted with a steel gantry to enable the community to easily extract the rods and replace worn out piston seals (the cause for over 70% of pump break-downs). With the gantries in place, plus pipe and rod stands, the communities can even take out the whole pump to repair the foot-vale whenever necessary. They are thereby empowered with appropriate tools and training, to carry out all maintenance activities themselves without having to rely on DDF in any way.

#### **4.1.3 Caution:**

The 253 hand-pumps, which have so far been successfully installed, are all brand new, high quality pumps. How effective and sustainable both the pumps and aspects of CBM will prove to be can only be determined over time. As such, on-going careful monitoring is called for. It may be found that further refinements to pump design may be necessary and possibly even further training of WP committees may be necessary to ensure that not only is the above effort and investment made secure and sustainable but, just as important, lessons learnt can be fed back to the Sector at large, both here in Zimbabwe and in the region.

#### **4.1.4 Replication in the Region:**

Government officials in Mozambique are particularly interested to have feedback on the Tsholotsho design modifications and experience as they have similar problems in many areas where water has to be pumped from great depth and their Afridev pumps simply are not up to the job.

Namibia has recently decided to standardise their National hand-pump and have chosen the Zimbabwean extractable Bush Pump. They have similar problems of having to pump from extreme depths. There has even been interest expressed from as far away as Sierra Leone.

**RECOMMENDATION:**

This extractable hand-pump capable of operating at extreme depths will require on-going careful monitoring. It is vital to find out what life the new design of pump seals will have; how the modifications to the pump design will stand up; and, in particular, how the local WP Committees will manage their new installations over time. If funding for this project is withdrawn, all this research effort may be wasted.

*Note: Please refer below to detailed information on actual progress in the two districts. Also explanations as to the various modifications and changes made to the standard extractable 65mm diameter "B"-type Bush Pump in order to make it robust, "user friendly" and capable of operating at extreme depths.*

**4.2 "Rehabilitate and upgrade 250 water-points"**  
(Logframe Activity No.2)

**Progress to Date: A total of 253 water-points have been rehabilitated**

**In Gutu: 121 water-points have been rehabilitated and upgraded:**

- 77 wells were deepened and fitted with extractable pumps;
- 44 boreholes were mechanically rehabilitated with extractables;
- 61 head-works were constructed on wells only;
- 44 head-works were rehabilitated on bore-holes only;
- 40 gantries installed (on all WPs over 30m deep);
  - 2 boreholes were successfully flushed out;
  - 1 borehole was successfully hydro-fractured
- 171 WP pump-mechanics trained.

**In Tsholotsho: 132 water-points have been rehabilitated and upgraded:**

- 132 boreholes mechanically rehabilitated with extractable pumps;
  - 10 boreholes successfully flushed out (3 failures);
  - 21 boreholes (included in above total) identified for R&D in 11 wards of Tsholotsho.
- 21 R&D pumps fitted with new seals & strengthened pump-heads on deep B/s (80-120m deep);
- 126 steel gantries fitted together with pipe & rod stands;
  - 40 pumps have had top-rods strengthened from 16mm to 20mm.

### 4.2.1 Background:

The general objective of this project was to investigate and demonstrate the rationale and cost-effectiveness of upgrading and rehabilitating water-points in the drier, drought-prone parts of the country.

In 1997 there were estimated to be approximately 35,000 hand-pumps spread out through the rural areas of the country supposedly providing safe drinking water to over 8 million rural people (70% of the total population). However it was becoming increasingly apparent that maintenance of these pumps was failing with over 30% of all hand-pumps being out of action at any one time. It is currently estimated that the number of hand-pumps, which are out of service across the country at any one time, has actually increased to over 60% today. In addition, the actual downtime is continuing to steadily increase. In fact, around 21,000 of Zimbabwe's hand-pumps are currently failing the communities that are dependent on them for their safe drinking water supplies.

Thus, rather than simply continue with the very expensive exercise of drilling more and more boreholes and installing standard bush-pumps (which would anyway eventually break down), it was decided that it would make more sense to rehabilitate and upgrade existing water-points in a cost effective way and at the same time attempt to enable local user communities to own and maintain the pumps in the future.

The original specific Output of this project was to rehabilitate **250 water-points** by installing "user friendly" pumps, ([Activity 2](#)) which would enable local Water-point Committees (one per WP) to be established and trained so as to maintain and manage their own water-points ([Activity 6](#)). When the one-year, no-cost extension was verbally approved by DFIDCA in November 1999 (it was only formally confirmed six months later on 22<sup>nd</sup> May 2000), an additional 40 WPs were agreed bringing the total to **290 rehabilitated WPs to be rehabilitated**.

### 4.2.2 Constraints:

The additional 40 pumps were ordered from V & W Engineering in March 2000, together with gantries and tools. However, between January and August 2000, ZimAHEAD's financial resources were very low. This was as a result of the very late receipt of the final (fourth) tranche of funds, amounting to **£201,106** (28% of the total Grant). Although this final tranche had been requested at the beginning of the year when the extension was agreed, it was only received from DFID's East Kilbride office on 7<sup>th</sup> August 2000. This delayed payment meant that collection of the long-overdue order of pumps from V & W Engineering could only be made in August for eventual delivery down to Tsholotsho. Time remaining to implement the additional installations was, as a consequence, obviously very much reduced.

Such difficulties and delays were further compounded by the fact that the national fuel crisis has affected Tsholotsho particularly hard. Since January 2000, there has been a very erratic supply of diesel in the area. No

movement of vehicles was possible for a good proportion of the year. This naturally impacted negatively on the distribution of all materials to site including the additional pumps and gantries as well as cement. Gutu fared less badly and 21 additional pumps were eventually delivered and installed during this extension period. However, in Tsholotsho, pump installations simply could not proceed and the outcome now, at the end of the project, is that there are 37 Bush Pumps and gantries in storage.

**RECOMMENDATION:**

**It is strongly recommended that additional time and resources are approved so that these remaining 37 pumps and gantries can yet be installed. This would provide immense EMMERGENCY RELIEF to the people of Tsholotsho who are facing the prospect of a drought and imminent crop failure this season.**

## **5. LOW-COST SANITATION**

### **5.1 “Construct household and school latrines and hand-washing facilities (in Tsholotsho)” (Activity No.3)**

#### **“Research on suitable low-cost latrine construction techniques in Kalahari sands” (Activity No.4)**

#### **5.1.1 Background to the Sanitation Programme**

Of the two Districts, Gutu was not included in the latrine programme because it already has an estimated 70% Blair latrine coverage throughout the district. However in Tsholotsho the coverage was estimated to be below 17% and thus a sanitation component was included in the three pilot wards of this disadvantaged district with a target of reaching 50% coverage. This would entail the construction of 1,450 household latrines.

#### **5.1.2 Technology Challenge**

The main reason for the surprisingly low latrine coverage in Matabeleland North and South and parts of Midlands provinces is because most of this region of Zimbabwe is composed of Kalahari sands. These are very fine, collapsing sands that are quite unsuitable for making traditional “farm bricks” normally used for constructing rural buildings in most other parts of the country.

This inability to produce locally made bricks has impacted negatively on past sanitation interventions in the region because the cost of constructing latrines is almost three-times higher than in the rest of the country. Normally

the subsidy per household is 3 bags of cement but in areas affected by Kalahari sands this has, of necessity, been increased more than three-fold to 10 bags of cement.

This 10-bag cement subsidy is used for making river-sand/cement blocks to fully line the pits and construct the superstructures of household latrines using the standard Blair latrine design. In Tsholotsho this has become very expensive as it necessitates not only the cost of importing cement from Bulawayo (over 120km away) but also transporting river-sand which is not readily available as there are no rivers running through this large district. This makes the brick manufacture and the subsequent cost of latrine construction prohibitively expensive and is one reason for such poor latrine coverage figures in the area to-date. Another reason is that the area is sparsely populated and well-wooded and consequently local communities are not driven by lack of privacy to construct latrines.

They have also been discouraged by the cost of building the 10 bag Blair Latrine, which up to now has been the only recommended option. A sanitation programme recommending such an expensive technology, in terms of materials and for the payment of builders by the householders, has been quite unsustainable at community level. In fact, only when there has been a willing donor prepared to support the construction of such expensive latrines has any household sanitation coverage been undertaken at all. There has been little if any replication by the community itself.

### 5.1.3 Progress To-date:

As mentioned above, the target was to achieve an increase in latrine coverage to 50% in the three pilot wards. This would require the construction of **1,450 new latrines** during the project period. In line with ZimAHEAD's strategy of using health education as the entry point in the development process, the first year of project implementation (1998) was entirely taken up with establishing Community Health Clubs and an intensive health education campaign.

Only after the rains in May 1999 did work get started on the construction of household latrines and various designs and modifications were developed which ultimately led to the "final solution" as described in 5.1.4 below.

By the end of 1999 approximately half (780 Household latrines) of the eventual target were under construction or had already been completed. Demand and enthusiasm for the new type of latrine was growing steadily. It was safely assumed that by the end of 2000 (after the one-year extension had been approved) the overall target would certainly be achieved or even exceeded. However, unforeseen events during 2000 like disruptive political activity and the national fuel crisis sabotaged this expectation.

**Progress on Household Latrine construction:**

**801 household latrines constructed** during the past two years.

An additional 1,022 households want to build latrines if only they can be provided with the 3-bag cement subsidy, giving a total of **1,823 households**. This would reflect as 62% latrine coverage (up from 17%).

NOTE: Target was to achieve 50% coverage

#### 5.1.4. Latrine Design

A simple innovation has been the use of a fully lined 3m deep *circular* pit, which has inherent strength in the shape instead of the usual rectangular pit design most commonly used. In addition, an ergonomically designed concrete cover-slab was designed which, together with the lining of the pit, requires only 3-bags of cement.

Simple steel moulds are provided, one to every CHC, in order for members to produce the trapezoidal-shaped interlocking blocks. The process of both making the blocks, lining the pits and casting the slabs is simple and certainly does not require a trained builder. In most cases women are forming themselves into groups in order to help each other construct their own individual family latrines.

The cost of having to pay for a builder has been found to add a prohibitive additional burden on to most rural families in order for them to construct the standard Blair latrine, as insisted upon by MoHCW. This affects particularly those poorer households who are understandably reluctant or unable to join in with such sanitation programmes, even when a donor freely provides cement. Such a major constraint as this has been totally overcome under this pilot project as every household, irrespective of wealth or status, has been able to join in the programme. The results on the ground clearly bear this out.

The super-structure (as opposed to the sub-structure) is left entirely to the householder to design and build. In contrast to the rest of Zimbabwe where the donor subsidises expensive brick super-structures, in Tsholotsho these are put up using traditional house-building techniques. Most households are quite prepared and able to undertake this aspect themselves. The quality and pride in household latrines are an inspiration to other areas, and the latrines are in keeping with the environment. (See Cover)

#### **PROGRESS ACHIEVED:**

A low-cost technology for constructing household latrines in Kalahari sands that requires only **3 bags of cement** (i.e. 30% of the standard 10-bag subsidy). An innovative approach that does NOT require skilled builders but instead can easily be constructed by local women's groups.

### **5.1.5 Research into SSB and PFA Technologies**

The Scientific & Industrial Research & Development Centre (SIRDC) was provided with a Contract under this project to investigate SSB (stabilised soil block) technologies for Kalahari sand conditions. In particular the use of PFA (pulverised fuel ash), a waste product from Hwange power station, was to be investigated. PFA is a recognised additive which is used in order to reduce the cement component in concrete and block production. Their findings were interesting and are included in their report.

Even though the addition of PFA was found to offer savings in the amount of cement required, (when mixed with Kalahari sand) its use was not in fact promoted because there were serious logistical problems in collecting the PFA from Hwange. However on a larger scale project, the use of PFA should certainly be given serious consideration as long as the logistics of collecting this waste product from Hwange, possibly by rail, made economic sense. The test results under this pilot project were very positive and, with the dramatic increase in the cost of cement in recent months, the use of PFA is likely to become increasingly attractive.

However, the use of Stabilised Soil Blocks has indeed been promoted and 12 of the Health Clubs in Tsholotsho were provided with block presses. Scotia Steel of Harare, in collaboration with ZimAHEAD, specifically produced these very robust presses for this project. (The SIRDC presses were found to be of poor quality).

Many of the super-structures have been made using SSBs while others use the more traditional "pole and dagga". The SSB approach makes it possible to use local Kalahari sand, which is excavated from the pit, as a convenient walling material if it is highly compressed with a little cement added.

### **5.1.6 Training in Latrine construction**

The project has provided training to health club members in the use of the block moulds and in the building of these low-cost, long-life sub-structures, which are estimated to have a useful life of at least 20 years.

The important aspect is that women can now construct their own latrines without the need to pay hired builders. Training was also provided in the production of concrete hand-washing tanks, toilet seat pedestals and ventilation pipes. All three items can be produced using only one bag of cement. This very low-cost innovation was well appreciated by most families and numerous households opted for this additional improvement to their latrine.

### 5.1.7 Replication of the Tsholotsho Experience in Demand led Sanitation

The remarkable upsurge in latrine construction within the three “pilot” wards of Tsholotsho has already started to draw considerable attention. The Tsholotsho RDC attributes the sudden demand for improved sanitation to the A.H.E.A.D. approach using Community Health Clubs and health education as an entry point. The Acting CEO of Tsholotsho, in a paper she presented to the Annual Sector Review Meeting held last October, highlighted this. The paper and accompanying video entitled “Demand Led Sanitation in Tsholotsho” raised considerable interest and was followed by visits to the district by the NCU and other organisations including UNICEF.

The general consensus is that Tsholotsho has pioneered a most successful approach to demand-led household sanitation which should be widely replicated elsewhere. Indeed UNICEF was requested to adopt the CHC approach for their Health Education programmes in Tsholotsho and elsewhere.

The consultant presented the same paper and video “Demand Led Sanitation in Tsholotsho” at the 26th WEDC Water and Sanitation Conference held in Bangladesh last November. There was considerable interest, particularly by IRC, who requested a copy for further onward dissemination.

### 5.1.8 Constraints

ZimAHEAD only obtained the 15 tonne truck necessary for delivery of cement in late 1998 after it was realised that the district was not going to be able to perform this vital function. It had previously been anticipated that Council vehicles would be repaired and used for the project, but DDF was incapable of looking after their vehicles despite substantial assistance from the project that, repeatedly and at some considerable expense, repaired their trucks and other vehicles.

During the whole of 2000 Tsholotsho was particularly hard hit by the on-going national fuel crisis. With no diesel it was simply not possible to collect cement from Bulawayo and deliver it to the various CHCs despite their huge demand for it. In the entire year a total of only 600 bags of cement could be collected from Bulawayo and a large proportion of this (362 bags) was used for school sanitation, as is discussed below.

If it had not been for the inability of the project to deliver cement and river sand as had been intended, the target would most certainly have been achieved and even exceeded. (After all, most of the 801 latrines were completed during 1999 when cement deliveries were not a problem). Indeed, sufficient funds remained at the end of the project period to purchase all the required cement. The fact that only 55% of the sanitation

target was achieved was due to lack of transport and also as a result of the delayed arrival of funds with which to purchase the cement in good time.

**RECOMMENDATION:**

There are currently a total of **1,823 active CHC** members in just 3 wards of Tsholotsho. Of these, 801 have already built their latrines. The remaining 1,022 are ready and keen to build latrines of their own. It is surely irresponsible development to abandon a community with such high expectations after they have been so strongly motivated. If the sanitation programme in the pilot wards of Tsholotsho is now abandoned, it is almost inevitable that the community there will have little faith in future programmes. Matebeleland North is one of the most disadvantaged regions in Zimbabwe and the projects there should be taken to scale rather than brought to an end so suddenly when there are still targets unmet due to political problems and constraints.

## **5.2 “School latrines and hand-washing tanks constructed as identified by inventory”** (Adjusted Output No.2b)

### **5.2.1 Background**

As with the Household latrines as described above, the project was challenged to develop cost-effective ways of building school latrines and hand-washing facilities in the same difficult Kalahari sand conditions.

In school sanitation programmes all across Zimbabwe, the normal design is to construct a ten-compartment block of latrines. A 3m deep pit would be excavated for the full length of the latrine block and then these would later be lined with bricks (or cement and river-sand blocks in cases where there are no locally available bricks). Partition cross-walls would then be constructed for every compartment so that there would be one separate lined pit for every latrine.

### **5.2.2 School Latrine Design**

While this design has worked reasonably well there have certainly been problems particularly where the ground conditions are not stable as is the case throughout the Kalahari sand zone. As the whole 18m long X 1.5m wide X 3m deep trench has to be fully excavated before the brick lining activity of the sub-structure can begin, there is every likelihood that the pit may collapse, at least partially, unless the soils are very stable. In Tsholotsho and other areas this is invariably the case and it has meant that a considerable amount of effort (and cost) was expended excavating (and re-excavating) unnecessarily large pits.

This problem has been completely overcome by adopting the same circular sub-structure design as was introduced for the household latrines. A single pit would only be excavated when there were sufficient interlocking trapezoidal-shaped blocks to fully line it. This lining activity only takes a few hours, as does the excavation of each circular pit in such soft sand conditions. Because the whole activity is carried out within a day there is considerably less chance of any caving in of the sides from occurring. Once all ten pits have been excavated and lined in this way, then the work on the super-structure can begin.

This innovation for the sub-structure of school latrine blocks has several immediate benefits as follows:

- There is a 30% saving in the amount of cement used;
- Time and effort to excavate the sub-structure is greatly reduced;
- Local PTAs can contribute much more by moulding the blocks and excavating and lining the pits themselves as this does not require a skilled bricklayer (although a qualified builder is still required to supervise the work).

Another innovation was to change the plan layout of the super-structure walls so that the latrine slabs can be easily removed. The standard school design does not allow this removal of latrine slabs because cross-walls straddle the pit slabs at the edges making it impossible to do so without first demolishing the super-structure. The new idea is to remove the slab easily so as to be able to empty the pit when it eventually fills up and thereby greatly extend the useful life of the latrine.

### **5.2.3 School Latrine Technology**

For the superstructures, which require concrete blocks to build the walls, a mechanical block-moulding machine was used. This machine would be moved from school to school so that sufficient blocks could be made for each latrine building (of ten stances). This proved to be a good investment because although the machine entailed capital expenditure, there was a considerable improvement in the quality of the blocks and a saving in breakages. (Note that both river-sand and cement have to be imported from great distances making these materials expensive and therefore proper control of waste was necessary). The production rate of blocks was also considerably increased and proper curing procedures were carefully controlled.

### **5.2.4 School Hand Washing Facilities**

As for school latrine hand-washing facilities there was yet another innovation, which employed pre-cast concrete rings made on-site to avoid transport problems. Two of these rings are joined horizontally so as to provide a 1,000 litre hand-washing tank with a reduced-flow tap fitted and a concrete apron and run-off constructed around the base pedestal. Again, there are considerable savings in time for constructing these tanks as well as in the quantity of cement used (approximately 25% of the standard design).

### 5.2.5 Female Sanitary Facilities

Research, both here in Zimbabwe and in several other countries in Africa, clearly indicates that one of the main reasons for so many girls dropping out or missing many days of school is because of grossly inadequate female sanitary facilities being provided for them at schools. Congestion, poor maintenance and, most important, absolutely no consideration given to the design of latrines sympathetic to their needs are the main reasons given for this problem. To try to address this issue the project has constructed the first two female urinals ever made in Zimbabwe. They are currently on trial.

### 5.2.6 Progress To-date:

The inventory of schools requiring assistance in the three wards identified a total of **15 schools**.

**Actual achievements are as follows:**

**5 schools completed  
5 schools under construction  
5 schools yet to start  
2 female urinals completed and on trial.**

### 5.2.7 Constraints

The problems of diesel shortages and difficulties with material delivery, as described above, are the reasons for the failure to meet all the targets.

**RECOMMENDATIONS:**

**It is strongly recommended that the project should source funds in order to complete all the outstanding school latrines. In addition, monitor and adjust the designs of the new female urinals and latrines where necessary according to the "user response".**

## 6 CBM & HYGIENE EDUCATION

### ***“Production of CBM and health training materials”.***

(Activity No.5)

### ***“Community involvement in planning, management and maintenance”.*** (Activity No.6)

#### 6.1 Background

As noted in the Introduction above, one of the main reasons for involving the NGO Zimbabwe A.H.E.A.D as an implementing agency was to use their methodology to implement the Water and Sanitation component of the project by first mobilising the community through a thorough Health Education Campaign.

Since the first pilot project using the Community Health Club approach in Makoni in 1995, this innovative strategy had clearly demonstrated that a strong *community demand* for improved sanitary facilities and a safe drinking water supply was a logical outcome. This new approach also greatly facilitated the implementation of CBM activities at a grass-roots level. There was also clear evidence of positive behaviour change in hygiene practices at household level leading to some remarkable improvements in health and general improved standards of living.

The village-level Health Clubs in Makoni had demonstrated that they could become a *vehicle* for a *broad* range of development activities. After addressing their hygiene, water and sanitation needs, members would move on to focus on a wide range of income generating activities. This long-term “*process of development*”, (similar to the “*sustainable livelihoods*” approach now being promoted by DFID) was clearly working in Makoni district and it was decided to replicate this new methodology in other areas.

In addition to the Project in Gutu and Tsholotsho, Zimbabwe AHEAD was asked to train all district staff in Bikita and Lupane IRWSS projects in the CHC approach. Participatory health education training materials (previously developed by ZimAHEAD) were made available to these DFID funded IRWSS projects as well as to other organisations in the region including Care International. An extensive range of 10 sets of participatory health and hygiene topics had also been included in the National EHT Training Kit, which had been widely distributed to all 800 EHTs across Zimbabwe by UNICEF during 1996.

## 6.2 The Community Health Club Methodology

As with the hardware component of this project, the 'software' has been equally innovative, in terms of solving the problem of creating a genuine demand for sanitation, which is seen as an important indicator of positive behavioural change relating to hygiene.

In every village in the project wards, at least 60% of the households are represented in a Community Health Club. This is formed and facilitated by the Ministry of Health EHT who is responsible for health issues in his area. The members of the health club are taken through a long process of health education, which involves weekly meetings for at least six months. During these sessions at least twenty topics relating to preventable diseases and general hygiene are covered in depth using participatory activities that involve even the most reticent member of the health club.

During this process the Health Club members become committed to common values and develop a genuine 'culture of cleanliness'. This is manifested in their appearance and the high standard of hygiene in their homes. A competitive element is introduced by home visits by the whole club to every member's house to encourage members to maintain the required standard. The standard of hygiene displayed by health club members has exceeded all expectations and needs to be witnessed to be believed. In Tsholotsho the kitchens have become works of art, with decoration and home pride reaching unprecedented levels.

## 6.3 Number of Beneficiaries

<b>Achievements by February 2001:</b>			
	<b>Gutu</b>	<b>Tsholotsho</b>	<b>TOTAL</b>
<b>No. of Wards</b>	<b>16</b>	<b>3</b>	<b>19</b>
<b>No. of EHTs</b>	<b>12</b>	<b>3</b>	<b>15</b>
<b>No. of Clubs</b>	<b>85</b>	<b>32</b>	<b>117</b>
<b>No. of Members</b>	<b>4,505</b>	<b>1,823</b>	<b>6,328</b>
<b>Average No. per Club:</b>	<b>53</b>	<b>57</b>	<b>54</b>
<b><u>No. of Beneficiaries:</u></b>	<b>27,030</b>	<b>10,938</b>	<b><u>37,968</u></b>

## 6.4 Achievements in Health Education and Home Hygiene

- All **6,328 members** are fully knowledgeable on all preventable diseases such as Diarrhoea, Cholera, Typhoid, Bilharzia, Malaria, Skin and Eye diseases, Anthrax, TB and AIDs.
- Nearly **40,000 family members** of CHC members are already benefiting from the following practises as a result of improved hygiene consciousness in the home:

Correct hand washing practises  
Use of soap for hand washing  
Correct Water Storage  
Use of ladle for drawing water  
Individual cups and plates  
Use of a pot rack and clean storage  
High personal/family cleanliness  
Correct disposal of solid waste  
Safe Sanitation (*See below*)  
Safe water supply  
Keeping Nutrition gardens and fruit trees  
Woodlots to prevent deforestation

### **RECOMMENDATION:**

The 117 existing Health Clubs are primed for take off in the broadest sense of development, having spent 3 years creating substantial 'Social Capital'. This may be wasted unless support continues.

In line with DFID's commitment to '**Sustainable Livelihoods**', the existing Community Health Clubs should be supported through another 2-3 year programme, which will address such issues as poverty eradication, social development relating to civic rights and responsibilities, as well as psychological problems such as child and wife abuse and coping with AIDs.

This is already happening successfully in Makoni District where Danida is funding a more holistic type of development. In this district there are already over 500 groups, formed out of 84 CHCs, who are now generating substantial amount of income. (Please refer to Appendix on Income Generating Activities).

ZimAHEAD focuses on long-term, holistic development and is committed to the communities it serves.

## 6.5 Sanitation Consciousness

An indicator of the success of the health education campaign is that every household quickly adopted the “cat sanitation” method soon after the start of their respective CHC sessions. Whilst plans were made to eventually provide all members with a latrine, in the short term every household member put up a “badza stand” (a forked branch to hold a hoe) and a hand-washing facility in a convenient place near their homes. This indicated their genuine commitment to take the first step up the “sanitation ladder”.

As far as health improvements are concerned, this really is *the* “quantum leap” forward that most WatSan programmes are hoping for. To move from open defecation practices to carefully burying faeces and then, most important, washing hands after every occasion is a major behavioural change. The construction of odourless, fly-less latrines that are the ultimate objective of the programme, really only provides extra convenience and comfort. However as far as *health* improvements are concerned, “taking a badza” and washing hands afterwards with soap, is *the* behaviour change that will impact positively on preventative health.

It also means that even when people are far from their homes (and latrines) and may be working in their fields, this safe sanitation practice is more likely to continue. Thus even those households that do not yet have their own new latrine are at least already benefiting from their greatly improved knowledge regarding preventative health issues as a direct result of the CHC approach.

## 6.6 Training Materials

Zimbabwe A.H.E.A.D provided all training materials required by the EHTs, as shown in the Catalogue.

During the project period new training materials were developed and printed; notably on the topic of Sanitation and AIDs.

A plastic laminated step-by-step Maintenance Card was also developed to support training of Pump Minders for the new user friendly Bush pump.

In addition, ZimAHEAD now has the capacity to produce training videos of a professional standard at a fraction of the commercial cost. Two videos have already been produced on Community Health Club Activities and Demand Led Sanitation in Tsholotsho.

ZimAHEAD has a full time ethnographic artist/video editor and has the capacity to produce training material for the region. The printed training materials are already being used in many other countries in Africa and this trend is likely to increase as the Community Health Club Approach is adopted in neighbouring countries.

## 6.7 Implementation through Ministry of Health

The formation and running of Community Health Clubs is the task of the Environmental Health Technician. Under this project 8 EHTs were trained and issued with the participatory training materials needed to conduct sessions on all the topics mentioned above. They also fully understood the participatory methodology that seeks to empower the 'recipient' rather than provide a platform for the 'teacher'.

The most important form of support for the EHT was to provide dependable mobility in order to fulfil his/her obligations to the Community Health clubs. Since the EHT was expected to run at least five clubs per year, meeting weekly, this demanded a strong sense of commitment to duty. Whilst initially the EHTs were sceptical about the methods they were required to use, they quickly became fervent protagonists of the CHC approach as, contrary to their expectations, it lightened their load and rationalised their use of time and energy. They coined the phrase 'the supermarket approach' to indicate that the Health Clubs were a "one-stop-shop" where all their duties could be performed at one time rather than the individual visits that had been necessary in the past.

In order to keep the 8 motorcycles running effectively, 'Riders for Health' was contracted to manage the fleet. Although there was a high charge per kilometre (to cover maintenance, replacement after 60,000 kilometres and insurance), the motorcycles were well supervised and maintained and the EHTs were properly monitored. Where abuse of the bikes was apparent, the rider was grounded temporarily. This proved to be an excellent system and kept the project running smoothly. However with the termination of the project, the issue of whether the bikes can stay in the district is a major problem, as they still belong to DFID.

### **RECOMMENDATION:**

The mobility of the EHTs has become a cornerstone of their success at mobilising communities. Without exception, EHTs under this project have been highly motivated & successful in controlling Cholera and Anthrax outbreaks in their wards as well as serving the community in terms of dedicated health education. They are all running between 5 and 17 Clubs each. Communities depend on the EHTs regular weekly inputs.

If the project is not renewed soon, the motorcycles should at least be handed over to the Ministry of Health, providing they can meet the running costs and be in a position to continue the contract with Riders for Health. This has already happened in the Danida funded project in Makoni, where the Ministry of Health, who have taken the project on as their own, are likely to sustain the project.

## 6.8 Replication

The Project had the original objective of supporting the establishment of CHCs in every village of the pilot wards. This has certainly been achieved and in fact has been greatly exceeded, particularly in Gutu. Whereas four wards were initially selected in Gutu to introduce this project, the demand for CHCs by communities in neighbouring wards and by the EHTs themselves has resulted in the programme expanding four-fold to cover 16 wards with the establishment of a total of 85 Clubs.

ZimAHEAD provided the additional 12 EHTs in Gutu who were outside the identified project wards with training in the CHC approach as well as with all necessary training materials, Membership Cards, Completion Certificates etc. However no other support was offered to the “non-project” EHTs. By comparison those EHTs who were being funded by the project received a motorcycle each (through Riders for Health) and T&S allowances etc. However the demand for the Clubs was so great that MoHCW agreed to support the additional EHTs themselves.

**As will be appreciated from the above, the health education component of this project greatly exceeded all expectations.**

## 7 Community Based Management and Maintenance of Water Points

### 7.1 Background

In view of the fact that the capacity of DDF to perform their maintenance role on hand pumps was rapidly deteriorating, the project was challenged to find a sustainable process for water-point management by the communities themselves. Although CBM has been supposedly implemented in the country under various IRWSS programmes for a number of years, the results so far have been almost universally disappointing.

A specific objective of the project was to find appropriate solutions to address this very serious problem that was adversely affecting the lives of so many rural people. The project aimed to investigate if the Community Health Club approach would create a clear priority on the part of villagers to maintain a safe drinking water supply. As this was not feasible with the existing Bush Pump that required heavy machinery to pull up the rising main, a more “user-friendly” type of hand-pump was essential.

#### **ACHIEVEMENTS IN CBM:**

- Of the 253 new water-points, every one has a functioning Water Point Committee in place.
- All pump mechanics have received extensive training in order to carry out pump maintenance and have also been provided with tools under this project.
- Most of these WP Committees have already started accumulating funds to pay for future maintenance and some have even purchased additional tools and spares.

During a DFID funded evaluation of hand-pumps in February 2001, the consultant, Peter Morgan observed for himself a pump set at 60 meters being completely removed (including rising main and foot-valve) by the community. Appropriate repairs were affected, and the pump was replaced and working again within six hours. The community was also able to demonstrate that they have collected funds over the past year and purchased additional tools.

#### **RECOMMENDATIONS**

What is needed now is to monitor the various Water-Points and determine the success or otherwise of this CBM intervention which, at this stage so soon after implementation, looks very promising.

## 8 RDC Capacity Building

### 8.1 Background

ZimAHEAD worked in close partnership with the two respective RDCs. This relationship had as an objective the building of capacity within each RDC and particularly the DWSSC. Although certainly a lot of progress was achieved in this regard it was certainly not as productive as hoped. The chief cause for this disappointment was the deteriorating political situation that has been gathering momentum during the course of this project.

For example in Gutu district the Chairmanship of the DWSSC has been changed five times. The DA changed twice and the CEO also twice. Such changes obviously caused a lack of continuity in the management structure of the district and this impacted negatively on the project.

In Tsholotsho the CEO changed twice as did the DA and the DWSSC Chair.

In both districts important DWSSC members from MoHCW, DDF and the other Ministries changed repeatedly during the project. By the end of the project there was in fact absolutely no representation from DDF in Tsholotsho. Thus the whole rationale of Capacity Building is put to question.

However, despite these shortcomings, there were at least some good efforts particularly in Tsholotsho thanks to the untiring efforts of Mrs Spiwe Mpofu who started off as EO Health and later took over the Chair of DWSSC. She and her team did their best and achieved some very good results together with the respective Ward Councillors. As such the involvement and management at village and particularly at Ward level, must surely be judged to be a great success under such difficult circumstances.

The previous Acting DA of Tsholotsho and Chairman of DWSSC, Mr Magura, is now the Provincial IRWSS Co-ordinator for Mat. North. He is well acquainted with ZimAHEAD's approach and of the very fruitful outcome of the RDC / ZimAHEAD partnership during the past three years. He is particularly keen that this project, as piloted, should be expanded into other wards of Tsholotsho as well as into some areas of Hwange district. A Project Proposal to this affect is currently being prepared.

## 9 Monitoring and Evaluation

### ***"Design monitoring and evaluation system"*** (Activity No.7)

The DWSSC teams of both districts devised good monitoring and evaluation systems during the last year of the project. However this again was a disappointment because it turned out in effect to be more of a "paper exercise" for the simple fact that the fuel crisis made it virtually impossible to actually get out into the project areas and physically carry out the monitoring and evaluation exercises.

However there is one noticeable exception to this and that was the monitoring work undertaken by Ministry of Health of the health education campaign through the Health Clubs. Zim A.H.E.A.D devised a system that *enabled the Clubs themselves to monitor the EHTs* in their attendance of Health Club sessions. The membership cards, carried by every Health Club member, could be used by the District Staff and Project Officers to carry out spot checks to verify EHTs claims. The Claim forms submitted monthly by the EHTs enabled the Project Officer to quantify exactly how many H.Ed. Sessions had been carried out, and on which topics, and the attendance that month. This data also enabled ZimAHEAD to assess the exact cost of health education per beneficiary.

## 10 Research and Dissemination

A base line survey was carried out in both districts during 1998 and this data is currently being compared to a survey, taking place at present, where 25 clubs from Gutu, Tsholotsho and Makoni Districts are being studied in depth. Clubs also carried out participatory "self evaluation" matrix exercises, and focus group discussions were held in 75 clubs, which were randomly selected.

The Director of ZimAHEAD is undertaking a PhD research degree, which is being supervised by Professor Sandy Cairncross of the London School of Hygiene and Tropical Medicine. The Research Title is *"The Social Psychology of the Community Health Club Strategy and its impact on the quality of life and improvements to family health in rural communities in Zimbabwe"*.

Initial results will be available by December 2001 on the completion of a DFID funded "Research and Dissemination Project", which aims to introduce the Community Health Club approach into three other countries in the Region.

**GENERAL RECOMMENDATION:**

As international interest in the Community Health Club approach, (pioneered by Zimbabwe A.H.E.A.D, and funded by DFID and Danida in three Districts of Zimbabwe) is increasing quite dramatically, it is imperative that the projects that initially experimented with and developed this new methodology should continue to be supported in order to monitor and evaluate the long-term benefits of this innovative development strategy for possible widespread dissemination.