SUMMARY

This is the report of a SIDA consultancy mission carried out in December 1989 and January 1990 by Per Olsson, Daisy Savanhu and Uno Winblad. The task of the mission was to review the ongoing Manicaland Health, Water and Sanitation Programme, to make recommendations for its continuation and to review a proposal for extending the programme to the neighbouring province of Mashonaland East.

The report is based on field visits to five of the seven districts of Manicaland, discussions with programme staff during three one-day workshops (attended by more than half of the provincial Public Health Inspectorate), meetings in Mutare and Harare and desk studies of relevant documents.

Over the past four years the SIDA funded programme has assisted households and local communities in constructing 20,000 Blair latrines and 1,500 communal water points. 160 schools have been provided with latrines and about half of them equipped with hand-washing tanks. The facilities are of good standard and constructed in durable materials. They seem to be well used. Over the past 12 months there has been a marked increase in health and hygiene activities within the programme.

The construction programme has slowed down over the past two years, from an output of 9,000 household latrines in 1987 to 3,000 in 1989. The programme has been suffering from an erratic supply of cement, mainly due to a nationwide shortage but also to lack of transport facilities and an inordinate delay in paying suppliers.

We recommend a continuation of the Manicaland programme basically in accordance with the draft project document submitted by MoH. The amount of SIDA funding required is a total of Z$5.4 mn for a three year period. By lowering the targets to a more realistic level, excluding staff housing and water testing kits, and reducing the amount budgeted for vehicle hire it should be possible to reduce to total amount of SIDA funding to Z$4.5 mn.

The draft proposal for Mashonaland East is a replica of the Manicaland programme. We are prepared to recommend a modified version of this programme.

CONTENTS

BACKGROUND INFORMATION

National policy

The stated goal of the National Master Plan for Rural Water Supply and Sanitation (1986) is to provide complete coverage of potable water supplies of the entire communal and resettlement area populations and to assist every rural household to construct its own latrine. The target date for complete coverage is year 2005. At that time the population of those areas is expected to be 9.2 million.

According to the Health for All Action Plan (1986) the target is that there should be one latrine per household and one protected water point per ten families in order to meet the objectives of providing safe water and excreta disposal for the whole population. An additional objective is the provision of appropriate health and hygiene education to all (p.61).

Manicaland

Manicaland is the easternmost province of Zimbabwe bordering on Mozambique. The distance from north to south is 450 km. The altitude varies from 300 m to 2,100 m above sea level. The climate is characterized by warm summers, cool winters and moderate (550-700 mm) to very high (>1,000 mm) rainfall during the summer, i.e. November to March. In the southern part of the province there are areas with low (450-600 mm) and very low (<450 mm) rainfall.

Administratively the province consists of seven districts, most of which consist of "communal areas" administered by District Councils and "commercial farming areas" administered by Rural Councils. There are 25 "Model A" resettlement areas and 20 "Model B" resettlements[1]. Two of the districts consist of a District Council only.

In the 1982 census 54% of the communal area population was under the age of 15. The average household size in the province was at that time 4.8. The census household definition is, however, not appropriate as regards the use of sanitary facilities. A more realistic figure, used in the Manicaland Development Plan of 1987, is 6.0-7.0. In this report we

[1] In "Model A resettlements farmers are allocated 5 ha of land on an individual basis. "Model B" resettlements are run as cooperatives.

are using the figure 6.5. Resettlement areas were not delineated in the 1982 census. Current population figures for resettlements have been provided by MLARS-office in Mutare.

Table 1: Population and households - Communal lands and Resettlement areas

	1982 population	1989 population	1989 households
BUHERA	168.520	207.954	31.993
Buhera DC	168.520	207.954	31.993
CHIMANIMANI	75.948	93.719	14.373
Mabvazuva DC	55.539	68.535	10.498
Cashel RC	4.270	5.269	811
Chimanimani RC	16.139	17.425	2681
RAs		2.490	383
CHIPINGE	200.927	247.943	38.145
Gazaland DC	140.130	172.920	26.603
Chipinge RC	60.797	67.580	10.397
RAs		7.443	1.145
MAKONI	222.168	274.109	42.171
Maungwe DC	148.609	183.338	28.206
Makoni RC	38.339	23.093	3.553
Tsungwesi RC	35.220	19.461	2.994
RAs		48.217	7.418
MUTARE	253.027	312.236	48.036
Mutare DC	128.246	158.256	24.347
Mutare RC	49.423	52.512	8.079
Mutare City	75.358	92.992	14.306
RAs		8.476	1.304
MUTASA	92.035	113.571	17.472
Chitepo DC	92.035	113.571	17.472
NYANGA	91.212	112.556	17.317
Nyanga DC	69.260	85.467	13.149
Nyanga RC	21.952	11.222	1.727
RAs		15.867	2.441
PROVINCE	1.103.837	1.362.088	209.507

Ongoing activities outside the SIDA funded programme

Since late 1985 NORAD has been supporting an integrated water and sanitation programme in Makoni district, including bore-hole drilling and well sinking as well as sanitation and training activities. The integrated programme was later extended to Chipinge and Chimanimani districts. SIDA funds have been utilized for the sanitation part of the health education components in these areas. NORAD may end its involvement in Makoni at the end of FY 90/91, going into Mutasa district. Lutheran World Federation (LWF) has been involved in deep well sinking in all the above districts, subcontracted through DDF within the integrated programmes and through MoH in Mutasa.

There are a number of other non-governmental organizations involved as well, mainly within water supply projects: Christian Care, Plan International, Redd Barna, Save the Children (USA), and the United Christian Church of Zimbabwe (UCCZ), see table below.

NGO	District
Christian Care	Buhera, Nyanga
LWF	Chimanimani, Chipinge, Makoni, Mutasa
Plan International	Mutare
Redd Barna	Chipinge, Nyanga (mainly refugee camps)
SCF (USA)	Chipinge
UCCZ	Chipinge

The large number of donor agencies, NGOs and ministries involved makes coordination crucial. Water and sanitation sub-committees have been set up in the districts but have not yet reached the desired potential. Absence from meetings, with and without apology, is all too common. Turnover of district level administrative staff is extremely high. These factors effectively reduce the level of coordination and integration achieved.

Programme history

SIDA support to the health sector in Zimbabwe was initiated in 1981. The aim of the programme was to support the move to spread basic health services to the rural areas.

The first proposal from MoH in the field of water supply and sanitation to be considered by SIDA was the "Community Based Rural Water Supply and Sanitation Programme" (Ref. No RAB 101) of October 1984. A SIDA consultancy mission (Boberg, Rubenson, Winberg) recommended in September 1985 support for a community based water and sanitation programme in Manicaland in accordance with the MoH proposal. The overall objective of the programme was to improve health, environmental conditions and quality of life for the residents of communal areas of Manicaland. The main target of the programme was to construct 15,000 Blair latrines and 1,500 springs and wells by June 1987. The total SIDA contribution was estimated at Z$1,260,000. The programme (in our reports referred to as Phase I) was started in 1986 and during the first year 1,942 Blair latrines and 318 water supplies were completed.

In March 1987 the programme was reviewed by a consultant (VIAK AB). Targets and budgets were revised by MoH and presented in a "Project Document, Workplan and Budget for 1 April 1987 to 30 June 1988". (We refer to this as Phase II.) The new targets were 9,320 Blair latrines, 200 multi-compartment school latrines, 275 wells and springs and 21 health education workshops. The revised budget (including the motor vehicles delivered to the programme during 1988 and 1989) envisaged a SIDA contribution of Z$1,646,000.

In January and February 1988 two of the present consultants (Olsson, Winblad) carried out a mid-term assessment of the Manicaland programme. The consultants recommended continued support to the programme after June 1988. Their recommendations were accepted by MoH and SIDA and formed the basis of the current project document.

The current programme

The current Phase III of the Manicaland Health, Water and Sanitation Programme is based on a Project Document of May 1988 covering the period 1 July 1988 - 30 June 1990.

objectives

The objectives of the programme are to improve living conditions in the communal areas of Manicaland through

- improving existing and constructing new water supplies that ensure an acceptable quantity and quality of water for domestic used and that are

reliable and accessible for the community;

- improving sanitation by constructing latrines and consequently preventing fly breeding and the transmission of disease;

- giving health education to improve hygienic practices and motivate behavioural changes.

SIDA inputs

The major SIDA input into the programme is the financing of materials subsidies and transport for the construction of latrines, wells and springs. SIDA is also funding health and hygiene education, the development and printing of educational materials as well as various staff training programmes and some pilot projects. The total SIDA input for Phase III is estimated at Z$2.7 mn. (For actual expenditures, see chapter Financial Aspects.)

expected outputs

The expected output for Phase III is 20,000 household latrines, 300 school latrines, 400 hand washing tanks, 600 wells and springs, 200 family wells plus health and hygiene education reaching 120,000 people, management and staff training, studies of fly screen production, afforestation support and household spares supply.

SCOPE AND FOCUS OF ASSESSMENT METHODOLOGY

According to the Project Document of May 1988 SIDA shall carry out a study of the progress of the Manicaland programme. The study, here called "mid-term assessment", shall form the basis for the identification of a possible continuation of the programme beyond June 1990. Terms of Reference for the assessment mission are attached as Appendix 1.

The assessment has been carried out by a team of SIDA consultants: Per Olsson, Daisy Savanhu and Uno Winblad.

This report is based on fieldwork in Manicaland, three workshops with district and ward level programme staff, a series of meetings in Mutare and Harare and desk studies of a number of documents. The itinerary of

the mission and a list of people met are shown in Appendix 2. The documents reviewed are listed in Appendix 3.

FINDINGS

Institutional framework

There are six government agencies involved in the provision of rural water supply and sanitation in Zimbabwe. The agencies and their respective areas of responsibility are:

MLGRUD	water planning and coordination;
MEWRD	piped supplies, water resource planning,borehole drilling;
DDF	borehole drilling, well sinking,pump maintenance;
MoH	well sinking,sanitation, health education;
MCCDWA	community mobilization, training;
MLARS	irrigation.

A National Action Committee (NAC) is responsible for the coordination of the work of these agencies.

The Public Health Inspectorate of MoH was in 1989 reorganized and renamed Environmental Health Department. The new structure and the present staffing are illustrated in fig 1.

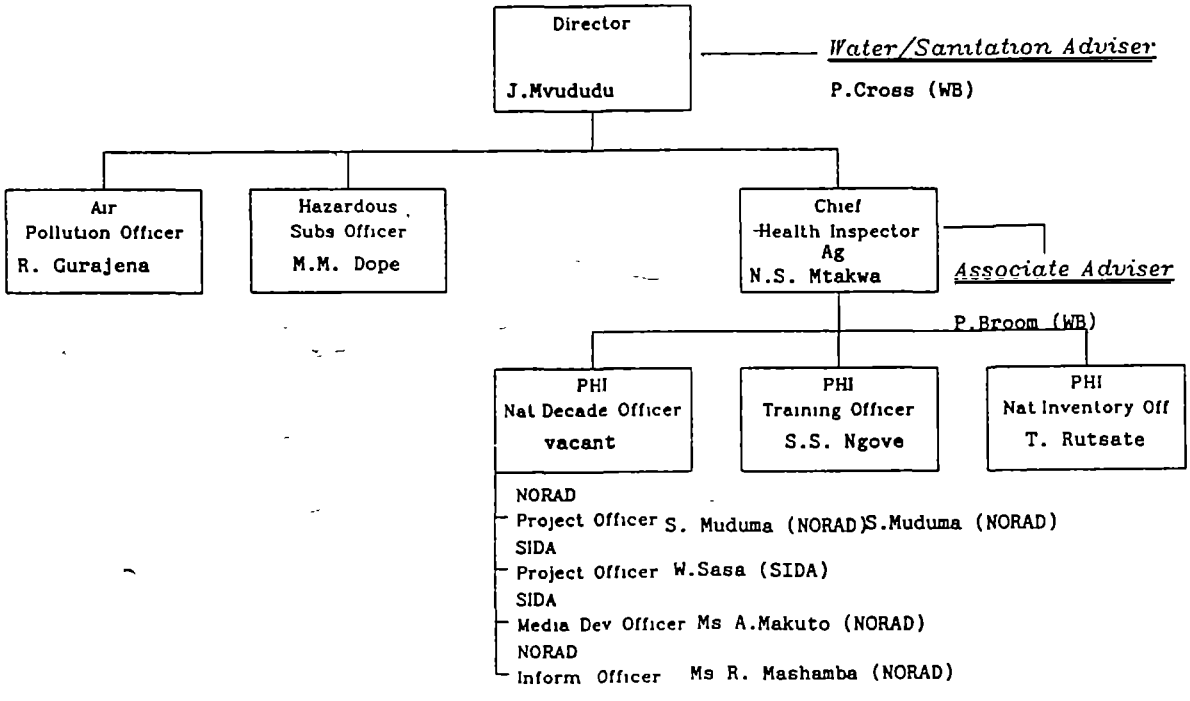


Fig 1: Environmental Health Department, MoH - organization and staffing January 1990

A special Health Technology Unit within MoH, is since 1974 in charge of technology development. The unit is part of the Blair Research Laboratory (BRL). At present the BRL falls under the Department of Epidemiology.

The environmental health staff situation is improving. There is now one District Environmental Health Officer (DEHO) for each district and 122 EHTs (including 3 Principal EHTs and 7 Senior EHTs) in the province. In addition there are 19 Health Orderlies and 11 others (e.g. field officers, drivers).

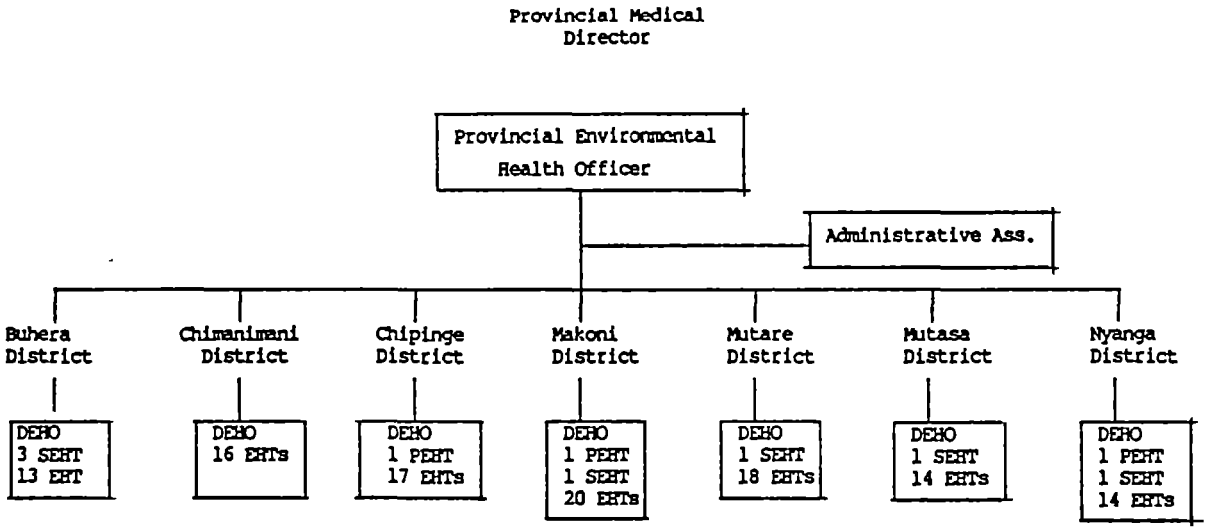


Fig 2: Manicaland Public Health Inspectorate - organization and staffing

There are about 190 wards in the communal areas of Manicaland. With the aim of having 1 EHT per ward there is still a backlog of some 80 EHTs for the communal areas. With the present volume of training the number of qualified EHTs is expected to increase rapidly during the 1990s.

In the new structure for local government that was introduced in 1985 there are elected representative committees at three levels: district, ward and village. The councillor who is elected for three years holds the most important political position at ward level, acting as a link between the population of the ward and the District Council. He/she represents his/her own Ward Development Committee (WADCO). Each WADCO represents 5-6 Village Development Committees (VIDCOs). A village in this administrative sense consists of approximately 100 households. The structure is shown in fig 3.

PROVINCE	Provincial Administrator	Provincial Development Committee (PDC)	Provincial Water & San. Sub-Committee (PWSSC)
DISTRICT	District Administrator	District Development Committee (DDC)	District Water & San. Sub-Committee (DWSSC)
WARD		Councillor, Ward Development Committee (WADCO)	
VILLAGE		VIDCO Chairman, Village Development Committee (VIDCO)	Water Point Committee (WPC)

Fig 3: Local government structure

Project procedures and community participation

Since the start of the programme the aim has been that activities should be based on community participation and self-help.

The ideal situation is described in the Project Document of March 1987: The initiative comes from the grassroots' level and needs are identified at that level. This may have happened occasionally, but more common has been a top-down approach with programme objectives presented to communities and local leaders. The project cycle can be described as follows:

1. When moving into a new area, ward or village, traditional leaders, the Councillor, WADCO- and VIDCO-members and VCWs are called to a meeting. The EHT, and sometimes district staff, present the aims and the organization of the activities as well as what is expected from the community.

2. Trough VIDCOs, VCWs and local leaders the discussions are brought to all villagers.

3. If the response is positive, a group of trainee builders is selected, the siting of water points is discussed and a Water Point Committee (WPC) is appointed - one for each water point

4 Builders are trained.

5. Families dig pits, procure local materials and burn bricks

6. Locally unavailable materials (cement, reinforcement etc) are collected from central points using available transport.

7. Families pay latrine builders and provide food for well diggers. The EHT is responsible for supervising the builders.

8. During this whole process, the EHT and the VCWs are organizing health and hygiene education activities (talks, drama, songs and story telling).

Community response to mobilization is generally very good. An interesting aspect is that women relate this to the motivation of the EHTs and the VCWs rather than to the activities of VIDCO- and WADCO-members.

In many cases mobilization activities have raised expectations high above the capacity of the programme. One problem is now that thousands of families in the province have dug their pits, sometimes also burnt bricks, without receiving the cement subsidy. The waiting time, exceeding one year in many areas, demotivates people and the momentum of the coordinated activities is lost. It should now be a priority to supply cement to those who have made preparations and to remotivate them. Through more realistic planning this series of events should be avoided in the future.

The training of local builders has given several spin offs, apart from the fact that latrine construction is speeded: additional income for families where a member is trained and increased local knowledge of construction work benefitting other building activities in the household as well as in the community.

Water point committees are not always functioning. We saw a number of cases where a completed well or protected spring was not looked after and in most of these there was no committee at all or a committee had been established but did not function. In other cases the committee had been involved at all stages, from the siting through the construction phase and continuing in the never ending maintenance work. It must be emphasized that the role of the WPC is crucial for the functioning of the well in the long run. Its responsibility should not just be to give service but rather to organize the community to do most of the maintenance: clean out spillways, repair fencing, look after the garden irrigated by spillwater from the water point etc. Only the more specific maintenance of the pump itself should be the personal responsibility of the pump caretaker.

We suggest that an agreement between the community, represented by the VIDCO, and the programme, represented by the EHT, is negotiated and signed before construction work starts. This "Voluntary agreement" (see Appendix 4) should specify what the programme is going to provide and what the local community is going to contribute now and in the future. No subsidy would be provided until the WPC was formed and the agreement signed.

Water supply

The water supply component consists of spring protection, communal shallow wells, communal deep wells, family wells and gravity-flow drinking water systems.

output

The total output of SIDA funded water points from June 1986 to December 1989 is shown in Table 2.

Table 2: SIDA funded water points 1/7/86 - 31/12/89

period	springs	communal wells	family wells
by 31/12/87	1,015		-
QI 1988	34		-
QII	30		-
QIII	9	59	-
QIV	5	24	22
QI 1989	11	76	17
QII	3	52	17
QIII	20	81	24
QIV	17	31	54
Phase III (3/4 of)	65	325	134
TOTAL	1,467		134

(Source: Quarterly Progress Reports)

The completion of 390 springs, shallow wells and deep wells during the first six quarters of Phase III means that 90% of the water points targeted for that period were actually constructed.

deep well project

The pilot deep well project in Mutasa district has completed the 58 wells of the expanded target (according to MoH's proposal of 22 August 1988) plus another two, total 60. Work has been started on another two wells but due to problems in getting explosives the labour force (four teams of well sinkers) has been laid off.

In our assessment report of February 1988 we questioned the role of well-blasting techniques in the programme and in our report of March 1989 we recommended that "a local consultant should be hired for an evaluation of the project before the next annual review".

The basic issues are, apart from cost-effectiveness, the procurement and handling of explosives and the responsibility for maintenance. If MoH is to continue with deep well sinking, proper procedures for purchase, transport and storage of explosives must be followed and the workers must be registered.

Regardless of the future of the project there is a need for an agreement between MoH and DDF on the maintenance of the 60 bush pumps fitted on the MoH-constructed deep wells.

The previously recommended study should be carried out. Even if there will be no continuation of the deep well project there is a need for an evaluation of the pilot project.

family wells

The pilot household well upgrading project started in 1988, aiming at completing 100 wells during Phase III. The main reason for the pilot project was the observation that many households continued to draw water from unimproved wells in the vicinity of the house rather than from improved community water points. "Very often the bucket is raised by hand on a rope without windlass, the rope and bucket being laid on wet and often contaminated ground around the well - a situation which is very unhygienic. Often contaminated water or rainwater run-off can run back into the well, leading to further pollution." (Morgan 1989)

In the current pilot project families with their own unimproved shallow wells have been offered a subsidy consisting of a strong windlass, a tin well lid and 3 bags of cement. The families themselves are lining the well with bricks, adding a concrete apron and water run-off around the

well head. The first demonstrations were carried out in Gwindingwi and Tikwiri areas (Makoni district) at the end of 1988. The initial results were promising and in our assessment report of March 1988 we recommended the pilot project to be increased from 100 to 200 wells. Our recommendations now are that family wells should be part of the regular programme and that the subsidy should be reduced to windlass and lid - no cement.

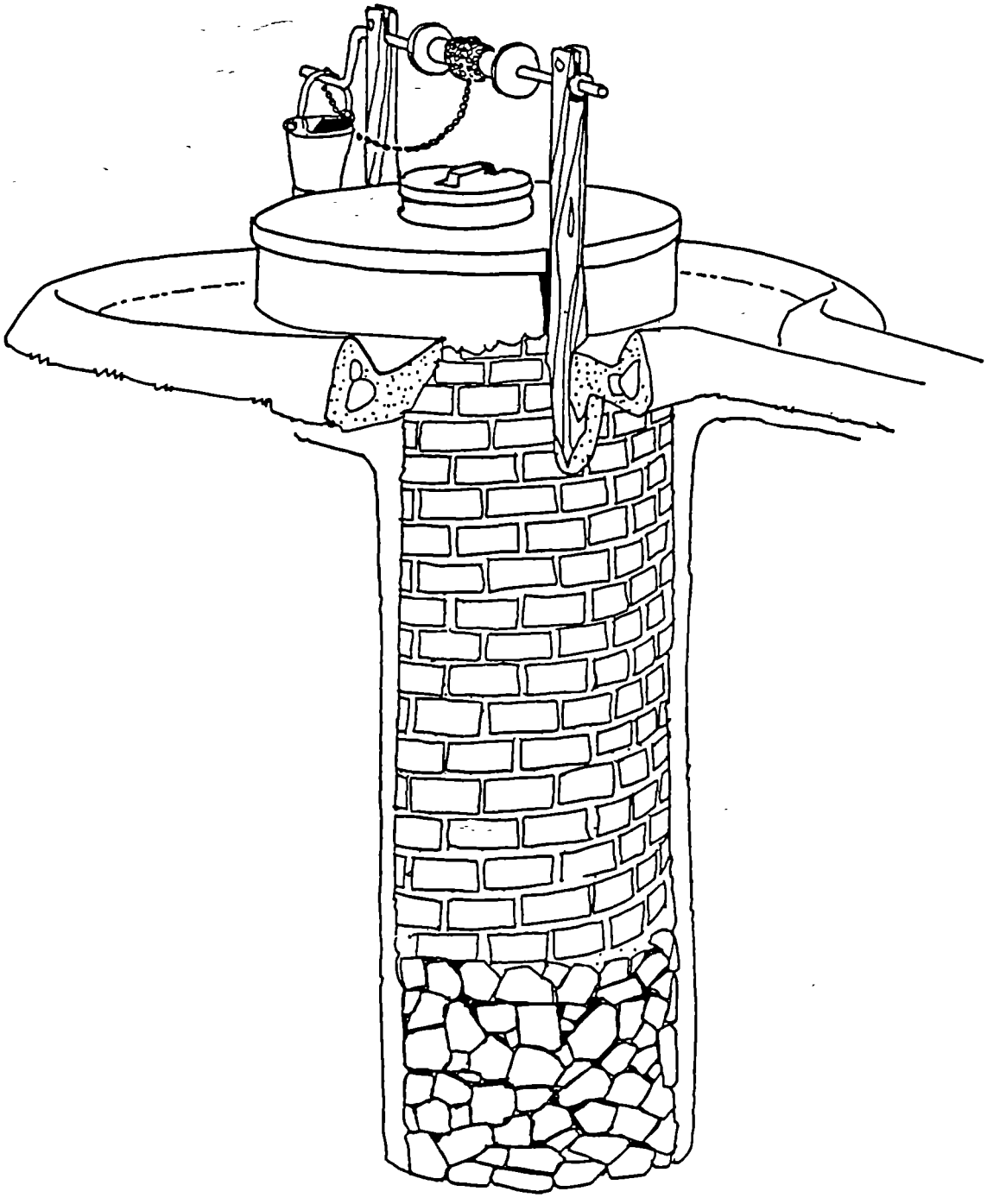


Fig 4: Section through a family well

gravity-flow systems

A pilot gravity-flow water supply system has been constructed in Chigodra village (Mutare district). In our report of March 1989 we suggested that "Before another gravity-flow system is added to Phase III certain questions must be answered. The questions relate to the roles of MoH, DDF and the local community in the construction, operation and maintenance of gravity-flow systems, to cost-sharing when additional households are connected and to the ownership of the installations." Until these questions have been answered we suggest a moratorium on multi-standpipe gravity-flow systems in the SIDA funded programme.

maintenance

The maintenance system for rural water supplies has three levels (tiers):

- a Water Point Committee consisting of three women and one man (one of the women trained as a caretaker);

- a Pump Minder employed by DDF to look after about 50 water points; the Pump Minders receive three weeks of training and are equipped with basic tools and a bicycle;

- a skilled Maintenance Team under DDF covering the whole district.

Sanitation

The sanitation component of the programme consists of household latrines, school latrines and handwashing tanks.

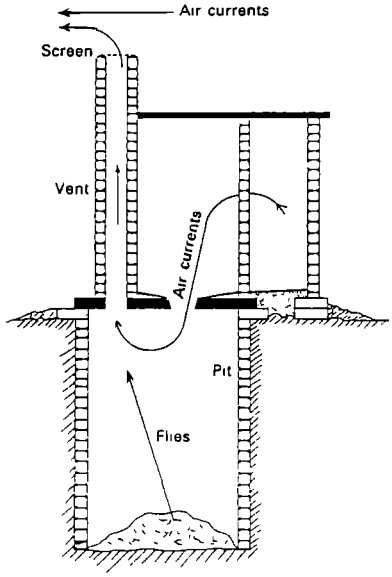


Fig 5· Section through Blair latrine (Ill. P. Morgan)

output

The total output of SIDA funded latrines and handwashing tanks from June 1986 to December 1989 is shown in Table 3.

Table 3: SIDA funded latrines and handwashing tanks 1/7/86 - 31/12/89

period	househ.latrines	school latrines	handwash.tanks
by 31/12/87	10,973	24	-
QI 1988	2,140	26	-
QII	1,250	25	7
QIII	1,388	21	4
QIV	1,180	4	2
QI 1989	628	8	4
QII	430	19	8
QIII	899	15	41
QIV	1,055	17	7
Phase III (3/4 of)	5,580	84	73
TOTAL	19,943	159	73

(Source: Quarterly Progress Reports)

The construction of latrines has slowed down over the past two years. In 1987 the output of household latrines was 9,000, in 1988 6,000 and in 1989 3,000. The completion of 5,580 latrines during the first six quarters of Phase III means that only 40% of the latrines targeted for that period were actually constructed. The reduction is due to a nationwide shortage of cement, exacerbated by the programme's inability to pay suppliers within a reasonable time.

latrine type

The sanitation component is based on the Blair latrine, see fig 5. The standard Blair latrine for household use is a single compartment latrine The Manicaland Provincial Medical Directorate did, however, right from the start of the SIDA funded programme adopt a double compartment latrine as the standard for the province, fig 6 The reason for this was said to be local customs requiring separate latrines for men and women.

The Project Document of March 1987 specifies "single or double compartment latrines as required" but in reality the households were encouraged to build a double unit.

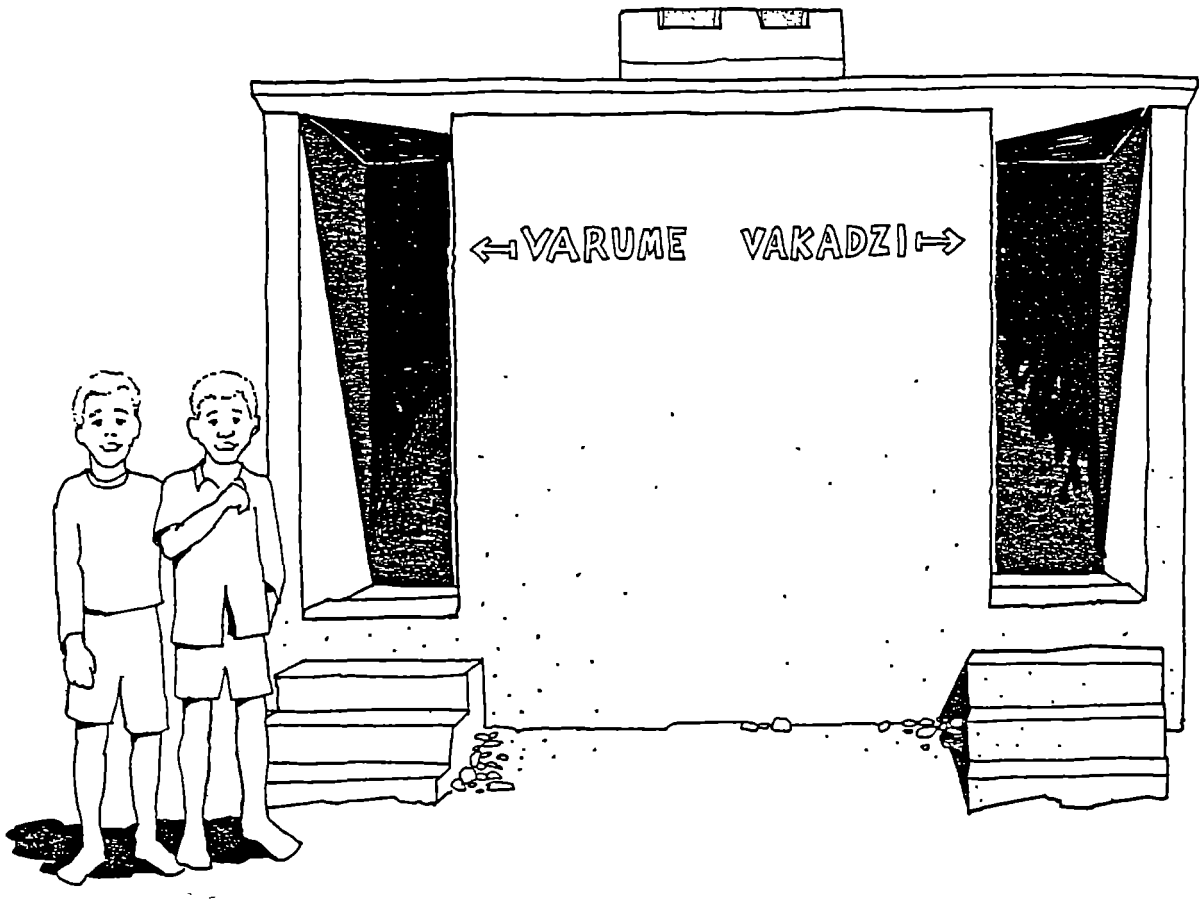


Fig 6: Double compartment Blair latrine

The issue of single or double compartmens was discussed in some detail in our assessment report of February 1988. Our concern was that the adopted standard would be unaffordable to the poorest part of the Manicaland population. Our recommendations two years ago were that:

- potential builders would be provided with instruction manuals for single as well as for double compartment latrines (the manual distributed in Manicaland describes only the double model);

- from July 1988 the households in Manicaland should be given the same subsidy as those in the rest of the country. (Those who wanted the double model would have to pay the additional costs themselves)

The current Project Document (May 1988) states that: "the emphasis in the programme will now move to the promotion of single compartments". The move has not started. Virtually all household latrines built during Phase III have been of the double model. Our impression is that this is not basically due to popular demand but rather a result of the attitudes of the Manicaland Health Inspectorate.

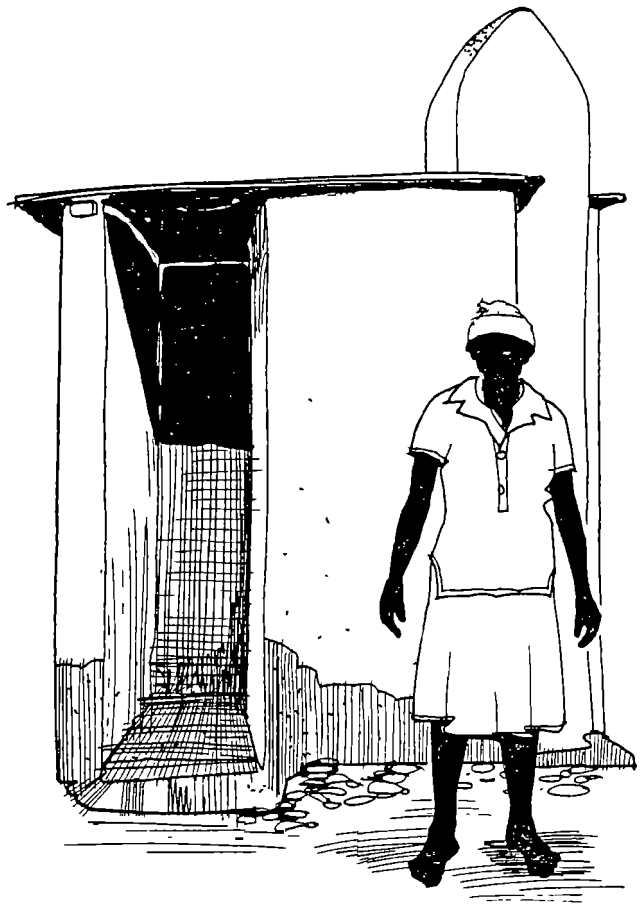


Fig 7: Single compartment Blair latrine

fly screens

Fly screens have not been available in Manicaland for a couple of years and 35,000-40,000 ventpipes have never been fitted with screens. SIDA's Purchase Division has ordered fly screens for the Manicaland programme from China. They arrived in Zimbabwe sometime in June/July 1989 and are now said to be stored at the Blair Research Laboratory in Harare. The consignment consists of 150,000 pieces packed in 100 crates.

The programme staff is now facing the formidable task of organizing the job of fitting 40,000 fly screens on latrines all around the province. This is a major operation and need to be carefully planned to ensure that the screens are fitted properly and within reasonable time. In many cases the top of the ventpipe will have to be modified before the screen can be fitted.

Fitting fly screens should now be given a very high priority. We suggest that the job is completed within the current Phase III, that is, before 30 June 1990. The screens not required in Manicaland within the next few years should be distributed to other provinces through BRL.

A new study of fly screen production should be carried out within a year. The study should specifically look at the feasibility of small scale manufacture, for instance by Vapositori (African Apostolic Church) craftsmen. They are already involved in wiremesh weaving.

subsidy

Our recommendation of February 1988 that the latrine subsidy per household (entirely financed by SIDA) shall be the same as in the rest of Zimbabwe has not been followed. (See also MoH Project Document of May 1988, section 5.1.2.1: "The policy of limiting the latrine subsidy to one latrine will be introduced in the course of the programme period.Those families who wish to build a double compartment will finance the additional construction themselves, with supervision and advice from the Health Inspectorate.")

In the rest of Zimbabwe the subsidy consists of 5 bags of cement plus reinforcement and fly screen at a total cost (December 1989 prices) of Z$101. Under the Manicaland programme the households receive 6 bags of cement plus reinforcement and fly screen for a double latrine at a total cost of Z$143. (The budgeted cost of the subsidy for a household latrine is in the May 1988 Project Document Z$70.) For a detailed break down of unit costs, see Appendix 5.

We maintain that "the long term policy should be to decrease, and eventually abolish, the subsidy for latrine construction". This recommendation is even more valid now than when it was first made in our assessment report of February 1988, firstly because of the cement shortage, secondly because the BRL has now developed a low cost version of the VIP latrine requiring less than 3 bags of cement.

intermediate solutions

In the field of sanitation the main objective of the programme is to assist each household in building a large volume, double compartment Blair latrine of permanent materials. The cost of such a unit is currently Z$578 (for details see Appendix 5). By December 1989 an estimated 17% of the rural households of Manicaland had been provided with this type of latrine. Of the remaining 83% some have pit latrines but most are using the bush It seems likely, given the constraints of building materials shortages and lack of transport facilities, that even after 10 or 15 years a majority of households in Manicaland will be without a Blair latrine.

This means that large amounts of human excreta will continue to be deposited on the ground. This problem has so far received no attention in this programme.

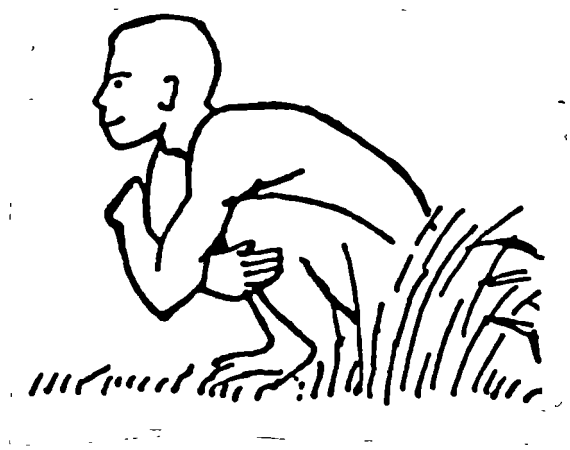


Fig 8: Most people in Manicaland have no latrine

A Blair latrine is, with the present state of the art, the best solution for rural sanitation in Zimbabwe. But as a temporary measure, and as a no-cost or low-cost supplement to the ongoing programme, other methods should be introduced for those who are unable to build a proper Blair latrine right now.

An example of such a solution is the "cat method": human faeces are buried in a 10-20 cm deep hole and covered with soil immediately after defecation. A variation of this theme is the lid-covered "one-day-latrine". It consists of a hole in the ground, about 20 cm wide and 20-30 cm deep. Every user covers his/her faeces with a layer of soil and preferably some wood ashes. A new hole is dug every day. The hole should be covered with a lid made of a piece of sheet metal, see fig. 9.

When the sun is shining on the lid the temperature inside the hole may in hot, dry climates rise above 45 degrees Celsius thus killing Ascaris eggs as well as eggs and larvae of hookworm and filth flies. We suggest that the BRL carries out some experiments to determine under what conditions this method may control flies and geohelminths

Simple pit latrines have been used in Manicaland for several generations. They are odorous and tend to promote fly breeding but at least they keep the faeces away from the surface of the ground thereby preventing the spread of helminths and the pollution of water sources.

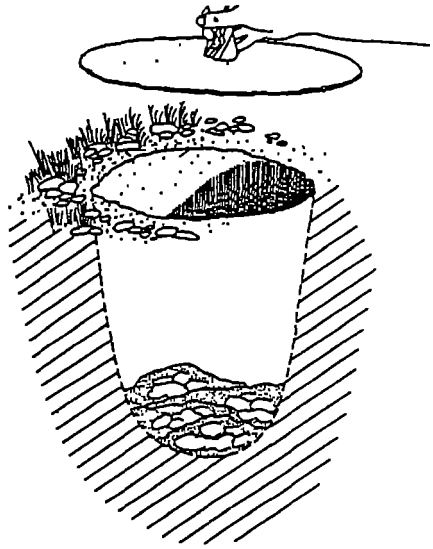


Fig 9: The one-day latrine

As long as resource constraints prevent the provision of one Blair latrine per household, these and similar methods of human excreta disposal should be promoted as an alternative to defecation in the bush. At the same time efforts should be made to reduce the amount of cement and reinforcement used in the regular Blair latrine to make it affordable to larger sections of the rural poor. Current experiments in that direction by the BRL should be closely followed and encouraged by the SIDA funded programme.

training of latrine builders

In districts with an "integrated programme", Makoni, Chipinge and Chimanimani, latrine builders are trained by local consultants paid for by NORAD (while SIDA funds are used for materials and tools). Since 1985/86 a total of 1,115 persons have been trained in these districts. Each village selects two persons for training. Since last year the villagers are encouraged to select women. Last year's assessment report, which contains details about the training programme, concluded that "The generally very high quality of the latrines constructed by builders trained under the Manicaland programme indicates that the training programme is adequate."

The annual expenditure of NORAD funds on training has been around Z$230,000 per year for 1987/88 and 88/89[2]. During that time the total number of builders trained in the three districts was 600. The average cost per trained builder (excluding materials used in training) is thus Z$767. This cost is hardly sustainable and we recommend that the programme finds a more cost-effective way of training latrine builders.

In districts not covered by the "integrated programme", Nyanga, Mutare,

[2]MLGRUD: "Expenditures on NORAD financed activities 87-89".

Mutasa and Buhera, builders are trained by the EHTs. We have no figures for the number of builders trained in these districts. The quality of latrines constructed by EHT-trained builders is satisfactory.

latrines for the disabled

Through the initiative of an EHT in Makoni district a number of Blair latrines adapted for disabled persons have been built. We saw two of these in Nyambiya area, Mutungagore ward. One double compartment latrine was equipped with handrails 20 cm above floor level (both mother and son were paraplegic, moving on their knees), see fig. 10.

Fig 10: Blair latrine adapted to handicapped mother and son

An elderly man using crutches due to weakness of his legs, living in the same village, could hold on to handrails on both sides of the path leading up to his latrine. There were also handrails inside the latrine and an elevated seat (see fig 11).

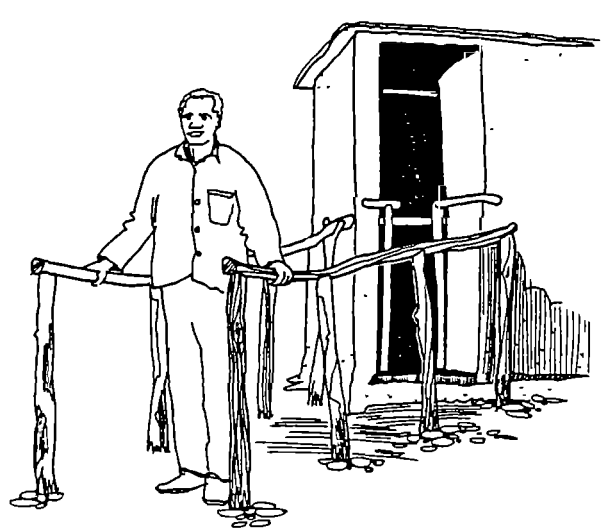


Fig 11: Blair latrine with handrails

The approach chosen had been flexible and innovative, and the solutions were well adapted to the individual handicaps. The construction was done free of charge. The programme should support this type of initiative and give opportunity to programme staff in other districts to learn from the experiences as well.

Coverage

According to the 1982 census the source of drinking water was a well or bore hole for 65% of the communal lands population in Manicaland. 27% were using surface water (with a variation from 12% in Makoni district to 48% in Chipinge district). The percentage of protected wells was not recorded. As regards latrine facilities it was found that 33% of households had a pit latrine and 64% had no facility at all.

water supplies

Data from DDF in Manicaland together with figures from the ongoing national inventory for water supplies and sanitation show that there are more than 4,500 protected water sources in the communal lands and resettlements of the province by the end of 1989. This gives an overall service level of one protected water source to 36 households. There is an important difference in service level between districts though. Makoni district has the highest figure for most types of primary water supplies and a service level of 1:27. Chipinge district has the lowest number of protected water supplies and a service level less than half of Makoni's, 1:56.

Table 4: Protected water sources in communal lands and resettlement areas by Dec 1989

District	Bore holes	Prot. wells	Prot. springs	Total	Service level
BUHERA	576	275	1	852	1:38
CHIMANIMANI	200	55	30	285	1:38
CHIPINGE	397	42	55	494	1:56
MAKONI	836	461	42	1339	1:27
MUTARE	585	262	6	853	1:46
MUTASA	28	267	87	382	1:30
NYANGA	218	110	9	337	1:46
PROVINCE	2.840	1.472	230	4.542	1:36

latrines

By the end of 1989 the number of completed Blair latrines in the communal lands and the resettlement areas was 27,592 according to district statistics compiled in January 1990 (table 5)[3]. The overall household coverage is therefore 16-17%, assuming that the average household size is 6.5. As can be seen in the table coverage is highest in Nyanga, Makoni and Chimanimani with figures above 20%. In Buhera district the coverage is only 7%. At ward level the difference is more striking. A few wards in Makoni have reached more than 80% coverage (Dumbamwe and Tikwiri wards) whilst three other wards in the same district have a coverage of less than 10%. Similar differences are found in most districts.

Table 5: Sanitation coverage in communal lands and resettlement areas, 31 Dec 1989

District	Nº of house-holds	Nº of Family BVIPs	Coverage (%)
BUHERA	31.993	2.269	7,1
CHIMANIMANI	10.881	2.188	20,1
CHIPINGE	27.748	5.087	18,3
MAKONI	35.624	7.493	21,0
MUTARE	25.651	4.148	16,2
MUTASA	17.472	2.512	14,4
NYANGA	15.590	3.382	21,7
PROVINCE	164.959	27.079	16,4

Health and hygiene education

The health and hygiene education activities of the programme shall, according to the Project Document, consist of development of educational materials, general health education carried out by EHTs, and workshops organized by the Provincial Health Education Officer and a Project Health Educator.

A Project Health Educator was appointed 1 January 1989. Since then there has been a marked increase in health education activities. With the objective of gathering information on environmental health related

3. Of these SIDA has funded 19,940, i e. about 75% of all household latrines

matters, a two-stage review was carried out by the Project Health Educator during early 1989. It consisted of a questionnaire to all 54 EHTs in four of the districts, and a semi-structured interview of all the members of the district health teams in the province. Over 80% responded and the main findings were:

-poor integration on water and sanitation issues between ministries at the district level;

- water committees not well-functioning at many water points;

- lack of suitable educational materials for use at community level;

- unsatisfactory knowledge of educational methods;

- unsatisfactory personal/home hygiene (handwashing, water storage, refuse disposal);

- frequent use of unprotected water sources in case of pump breakdown as well as during the rainy season.

After, and partly parallel to, the review phase an intensive phase of training has been launched in four districts (Chimanimani, Chipinge, Mutare and Nyanga). Implementation was greatly enhanced through the provision of a hired vehicle for the health education officers. A total of 23 workshops for VCWs, EHTs, WCCs and local leaders have been held, reaching over 900 health workers and another 250 local leaders (councillors, chiefs, kraalheads etc).

The major component of the health education workshops has been training in communication skills suitable for community level,i.e. participatory methods such as drama, songs and poems.

There will be a follow up on the workshops already held within the next two months in order to assess the effect of the training on teaching methods and knowledge among the main target group, the VCWs About 95% of the VCWs in the four districts have participated.

The remaining three districts in the province (Buhera, Makoni and Mutasa) will have training workshops during 1990. These will benefit from the evaluation which is in progress. Apart from that some other changes should take place, reflecting the inclusion of alternative methods of sanitation as another major focus of interest in the programme.

Still another problem that needs to be addressed is the continued use of very small volumes of water, recently reported by Saugestad from Makoni. She found that the daily use of water was 8 litres per person or less in more than 50% of households. This is not mainly due to long walking distance to the water source but to the strong traditional attitude to preserve water. This is established through many generations' experiences of recurrent drought periods and is not easily changed. Health education is only one element in the long process of change required. Equally, or more, important is the reliable and permanent supply of water through well functioning water points.

There is a shortage of teaching aids for use at community level. Nationally produced leaflets, posters etc are said not to be adapted to Manicaland conditions and culture, thus creating a need for local production of handouts with the use of a photocopying machine. Our view is that the bulk of teaching aids and materials to be used at community level should be printed rather than photocopied. We suggest liaison with the media officer in the Environmental Health Department at Head office for the development of all printed material. Provincial adaptations should be quite possible to carry out (Manicaland, Matabeleland). Local production of handouts must not depend on photocopying machines as this would create a complete dependence on imported products. Other forms of reproduction should be considered.

There is a number of low-cost printing techniques available. One of these, the Sten-screen printing process, was tested in Zimbabwe in 1982. A manual is available from Intermediate Technology Publications Ltd, London. Other useful techniques are: duplicating with stencils, spirit duplicating (up to 200 copies), and hecto jelly pads (up to 100 copies).

Transport

Lack of transport is one of the major problems of the programme according to the quarterly reports. In our assessment report of February 1988 we suggested that "SIDA should engage a consultant to carry out a study of transport requirements within the programme, the proposed 'revolving fund' for motorcycles, previous experiences of such funds in Zimbabwe, a comparison with the HESAWA programme in Tanzania, distribution, utilization, maintenance and the cost-effectiveness of alternative modes of transport with special emphasis on the use of bicycles".

In his assessment report of March 1989 Winblad stated that "Transport remains the Achilles' heel of the programme. The transport problem cannot be solved by the provision of more donor funded vehicles". The report also raised the issue of self-reliance: The programme ". . is creating dependence on donor funds in transport and maintenance. There are no signs that it is moving towards self-reliance in these areas".

the transport study ("Hick's study")

A SIDA-financed study of the transport situation in MoH carried out in November 1989 (Hicks 1989) came to similar results. The aim of the study was to "... assess the transport situation in the MoH with special emphasis on the utilization of vehicles, the organization of transport and the cooperation between MoH and CMED ...". The assessment was also supposed to "... cover the policy of the various donors regarding provision of vehicles".

The transport problems of donor funded programmes are, according to Hicks' report, closely related to the disastrous situation of the ambulance fleet: "... very few ambulances are on the road, while those that are operational are unreliable ...". When ambulances are unavailable, donor funded programme vehicles are used instead. As an example of what can happen a detailed account is given of the use during February-May 1989 of a Toyota Land Cruiser assigned to the Family Health Project in Mount Darwin district. The vehicle "... operated only 2% of the total km on the Family Health project for which it was supplied". 73% of its total km it was used for ambulance duties.

The basic problem, according to Hicks', is that there is no replacement programme. Vehicles are donated as a one-off exercise. Due to shortage of foreign exchange these vehicles are never replaced. Nor are there enough spare parts. Over a 5-year life, most vehicles will consume parts equivalent to 50-75% of the cost of a new vehicle. Other reasons mentioned in the report are a high number of traffic accidents, breakdowns caused through lack of care on the part of the Ministry's drivers, and CMED's inability to retain skilled mechanics.

The report is rather brief on the subject of motorcycles. It states i.a. that "... already delivered motorcycles are not in use (and deteriorating at CMED) ... the condition of the motorcycles currently standing unused must be a matter of grave concern ..."

Mr Hicks' recommendations are:

- a replacement programme basically funded by the government's own resources;

- a pilot scheme on the installation of radio communications at RHCs without telephone connection and in ambulances;

- a full-time transport officer in each province;

- some improvements within CMED

The study does not cover the topics listed in our February 1988 report:

- the proposed revolving fund for motorcycles;

- the HESAWA (Tanzania) programme's experience with motorcycles, bicycles and revolving funds;

- the cost-effectiveness of alternative modes of transport with special emphasis on the use of bicycles.

this programme

Motor vehicles for the Manicaland programme were ordered already in 1986 but were not delivered to the programme until 1988 and 1989:

- one 7-ton truck delivered in February 1988;
-one 7-ton truck delivered in August 1989;
- two Land Rovers delivered in February 1988;
- 73 motorcycles (Yamaha 125) stored at CMED, Mutare since April 1989. (We share Mr Hick's grave concern.)

During 1988 and 1989 the trucks and Land Rovers have been driven a total of 139,000 km. The programme has used them for 77,000 km (55%) of this mileage and for 63,000 (45%) they have been on other duties like MCH, EPI and malaria control.

In addition to using its own vehicles the programme has hired from PMD and CMED. The programme has used these vehicles for a total of 117,000 km. The combined mileage on the programme for 1988 and 1989 is thus 194,000 km, 40% covered by the programme's own vehicles and 60% by vehicles from other programmes.

For the use of vehicles donated by SIDA the programme pays CMED Z$0.55/km for the trucks and Z$0.51/km for the Land Rovers. For the hire of other government vehicles the programme paid a total of Z$85,142.

The Terms of Reference state that our assessment "shall specifically analyse the performance /of the programme/ in terms of sustainability, affordability, replicability and reliability". The purpose of SIDA's involvement in the Manicaland programme is to assist MoH in establishing a local capacity to carry out environmental health related activities even when the donor funds have been withdrawn. To a certain extent this is being done but definitely not in the field of transport. SIDA and other donor funds are used to build up a non-affordable transport system based on imported motor vehicles and fuel. The present transport system of the Manicaland programme cannot be sustained by MoH as there is no foreign exchange available for the purchase of spare parts and replacement vehicles. Within the foreseeable future Zimbabwe is unlikely to be able to afford a transport system based exclusively on the use of motor vehicles.

We recommend a "least-cost" approach to transport. This means that

- the need for transport should be minimized by increasing the proportion of local materials in construction;

- local means of transport (walking, carrying head loads, ox carts etc) should be the first choice when movement of people and goods is necessary;

- the use of bicycles should be increased. - "Bicycles have proved themselves the appropriate technology even in war, as when the North Vietnamese maintained their supplies along the Ho Chi Minh trail by bike-lanes beneath the jungle foliage.....China alone has 300 mn bikes, up from 100 mn ten years ago .." (The Economist, Jan 20, 1990).

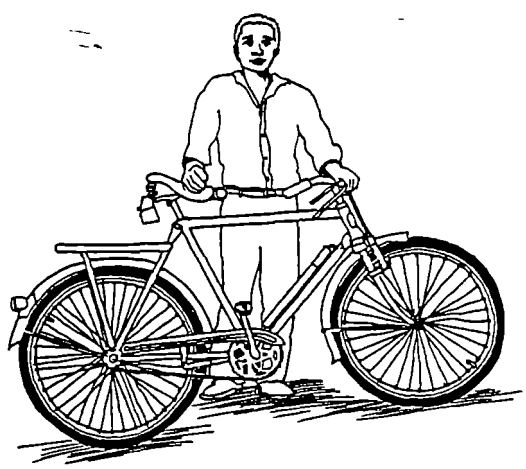


Fig 12: EHT with bike at Muromo Health Centre

Since 1988 MoH has a regulation that each trainee EHT must buy a bicycle for use on duty. For some reason (SIDA's donation of motorcycles?) this rule was never implemented in Manicaland.

- when distances to be covered are too long for bicycles, a moped or a 50 cc motorcycle should be chosen rather than a 125 cc motorcycle. They are "less dangerous to drive, less costly to purchase, cheaper to run and lighter to lift over obstacles when travelling off the road" (quoted from our assessment report of February 1988, p.20).

- when four wheel drive is required, the first choice should be a basic, no-nonsense, easy-to-repair, low-cost jeep like the Indian "Mahindra" rather than a heavy, much-too-powerful, extremely expensive 4WD station wagon like Toyota.

Integration of women in project activities

One of the objectives of the programme is to involve women in the planning and decision making processes of the programme. At the district level few women are involved at present. At the ward level most Ward Community Coordinators are women. This cadre is, however, hardly involved in the Health, Water and Sanitation Programme. At the village level women's involvement is more visible. The VCW is clearly identifiable in all development activities including water supply and sanitation. Women are represented on the Village Development Committee. Each Water Point Committee consists of at least three women. However, the lack of female representation at higher levels and the consequent lack of information flow from woman to woman severely reduces the qualitative participation of women at village level, in spite of the rather good participation in quantitative terms
Planning is still very much a top-down activity Women's role is mainly that of providing manual labour to projects when mobilized by EHTs and community leaders. Women are definitely not in control of programme activities.

water point committees

We interviewed members of 31 WPCs. Eight of them, all in Buhera district, were scrutinized more deeply. These eight WPCs are all chaired by men. In five women are treasurers and in six secretaries

In WPCs as in other organizations men are usually given the influential

position of chair person. Information on new development projects is disseminated through the community leaders, traditionally men. Other men are informed informally through various informal gatherings before an official village meeting is called. By the time the meeting is held the men are already conversant with the subject matter and are therefore voted in to influential posts on the basis of their knowledgeable contributions to the meeting. The three women are eventually selected in response to the guidelines for the composition of the WPC according to official policy.

The women appointed to the WPC are usually heads of household. There is a clear tendency, confirmed by Saugestad's study (1989), to appoint women with husbands working in town, widows or divorcees. This tends to reduce role conflict as a woman who is on her own is able to plan her activities without hindrance from a husband.

One of the woman members of the WPC is trained as a caretaker and given spanners and sometimes spares. The caretaker is supposed to carry out preventive maintenance like tightening bolts.

The Buhera sample of WPCs may not be fully representative of the situation in the province. Saugestad reported that out of 28 village WPCs examined in Makoni, 40% were chaired by women and of all committee members 77% were women.

women builders

Since 1988 the local communities in Makoni district have been encouraged to select women for training as latrine builders. There were no special criteria for selection. Altogether 116 women were trained and our own investigations indicate that about 50% are actually working as builders. The women work in groups. This mode of operation has become common when women participate in development activities, especially in pioneering roles.

Reported obstacles to women's participation in actual construction raged from lack of overalls to lack of motivation in tackling male dominated roles. Both women with husbands at home and single women are involved. Some women felt that the labour involved was intensive. Other women remarked that there was no difference between latrine construction and other tasks they traditionally have to carry out. Both men and women in the communities we visited respected the job these woman builders did. The woman builders normally charge Z$50 per latrine. Men builders charge from Z$70 to Z$120.

women's involvement

Women see their role as users of the water supplies and are concerned with a steady supply of clean and safe water at a reasonable distance. Women supply the bulk of all manual labour required. They attend meetings, contribute cash, food for the well sinkers and make bricks..It was found that women participate with much more commitment than men in the water and sanitation projects. They ferry stones and gravel to the construction site. All this is a heavy burden considering the other household chores that they have to undertake.

When a traditional spring is to be protected the local chief has to perform certain rituals. Women are involved in various crucial activities during this phase of the project.

The necessity to participate in training sessions held outside the ward is limiting women's involvement. Illiteracy discourages some women from taking part in development activities.

The requirement that women's involvement in water and sanitation activities should be extended to the planning and decision making phases is not disputed by the communities. Women are prepared to take these leading positions only if instructed and urged to do so. The extension workers we interviewed had no clear view on how to promote women's role in the programme.

Women are increasingly becoming aware of the need to be involved in development activities. In Buhera district women pointed out that the position of VCW should not be permanent. The persons should be changed every five years to give more women the opportunity to travel, learn and gain experience.

The values and principles which are basic to rural development are compatible with the aspirations of women. Women may not always be pursuing them consciously but rather through general application of government policies and involvement in programmes designed to strengthen women's organization. The aim of this programme should be to conscientise communities and extension staff about the role of women and to promote their participation, not only at village level but at higher levels as well.

The involvement of Ward Community Coordinators in water and sanitation is weak. This cadre, largely female, could play a much more

important role in initiating and supporting women's participation in water and sanitation activities if given training and back-up by MoH staff.

Human resource development

The management training programme described in the Project Document has not been implemented. It is still under preparation and is now included in the proposal for 1990-93. The Project Management Handbook is now available in final draft form. Printing is scheduled to take place within the next few months.

The consultants' recommendation made in the 1988 review to give each EHT an individual subscription to the journal "Waterlines" has not been followed, nor have we received any comments. We still think that providing each extension worker with his/her own copy of a job-relevant journal like "Waterlines" is an excellent way of providing continuing education. (Subscriptions are available from ITDG Ltd, 103-105 Southampton Row, London WC1B 4HH, UK).

In-service training in spring protection has been going on since 1988. A workshop was organized in November that year for 16 members of staff, and in May 1989 a group of 10 staff members visited the Kwale project in Kenya for a two-week study tour. Experiences from the tour have been documented in a report. The training has resulted in a clear increase in spring protection activities and the quality of the work done has improved markedly.

Inclusion of no-cost and low-cost sanitation in the programme will require great efforts to become effective. Some of these techniques may not be known well enough by programme staff, and there may also be negative attitudes towards this move. Training must therefore be organized early during Phase IV, and attention must be given to the possibility that some may consider this part of the programme as "a step back" whereas, in effect, it is the opposite: an attempt to improve sanitary conditions for the majority of people not having access to a Blair latrine.

Financial aspects

The budget of May 1988 allocates Z$2.7mn for SIDA funded activities during Phase III. The Phase III expenditure so far is:

July - Dec	1988	Z$427,313
Jan - Dec	1989	970,502
		Z$1,397,815

From 1 April 1987 (the beginning of Phase II) to 31 December 1989 the total disbursements from SIDA/DCO to the programme were SEK 10.95 mn or approximately Z$3.25 mn. The total expenditure during the same period is Z$2.57 mn.

The overall rate of construction was much lower in 1989 than in 1988:

	1988	1989
household latrines	6,000	3,000
multicompartment latrines	76	59
wells and springs	161	291

In spite of this the expenditure on building materials and transport increased from Z$624,475 to Z$787,561. Time has not allowed us to scrutinize the accounts but the increase can probably be explained by the higher price paid for cement, reinforcement and transport during 1989.

Detailed unit costs for latrines, springs and wells are shown in Appendix 5. The calculations are based on actual costs in December 1989.

The continuous budget follow-up proposed in our report of March 1988 should be introduced as a regular item from the next quarterly report. Such a follow-up would show that there is heavy overspending on certain items like transport and construction materials.

MoH PROPOSALS FOR JULY 1990 - JUNE 1993

During our visit to Zimbabwe MoH submitted two draft project proposals for the next Agreement period: one for Manicaland and one for Mashonaland East.

Manicaland

The Manicaland proposal is conceived as a continuation of the present SIDA funded programme The objectives are the same with the following additions:

- "The overall objective is to attain self-reliance by the year 2005. After this year the programme should continue at a pace that can be sustained by the community ..."

- A key strategy of the programme will be to give greater emphasis to involving women in the planning, execution, operation and maintenance of water and sanitation facilities."

A brief "Contingency plan for activities during cement shortages" has also been added. The cement that is available will be concentrated on those activities which will benefit the greatest number of people.

The MoH input consists of staff and access to transport and equipment. In terms of transport "the Ministry will endeavour to ensure that it replaces the current project vehicles at the end of their life span.....From 2006 the Ministry will be responsible for supplying all the vehicles needed under the programme as well as the vehicle running costs."

The SIDA input is, according to the draft budget, Z$5 4 mn. The major items in the budget are building materials (60%) and transport (15%).

The major outputs are 20,000 household latrines, 135 school latrines and hand-washing tanks, 750 wells and springs, 1,500 family wells and 10 staff houses plus trained staff and health education for 200,000 people The draft proposal also lists a number of studies to be completed during Phase IV: Local manufacture of fly screens, Evaluation of the impact of family wells, Investigation of the feasibility of gravity water supply schemes, and Development of Blair latrines with less cement

The Project Proposal states that "External support will be required for a long time to come". The rate of progress so far indicates that this is indeed the case. Only 17% of the rural households in Manicaland have a satisfactory latrine The water supply situation is more difficult to quantify but it is quite clear that a large number of households in Manicaland have no access to reliable, safe water supply. Considering the needs and the fact that the programme in spite of constraints has made good progress we recommend an extension in accordance with the Draft Project Document although with the following modifications:

- Considering the current cement situation the targets seem to be on the high side. As there are no indications that the situation is going to improve over the next few years we suggest slightly reduced targets for construction: 16,000 household latrines, 150 school latrines (with a corresponding number of hand-washing tanks) and 600 wells and springs

- Efforts should be made to reduce the amount of cement required per unit of construction. Work in progress at BRL indicates that it might be possible to construct a satisfactory household latrine using only 3 bags of cement. As soon as these preliminary findings have been confirmed by BRL we recommend a reduction of the subsidy from 5 bags to 3 bags of cement per household.

- Major health and hygiene education efforts should be directed at the majority of Manicaland's population at present unable to construct a regular Blair latrine.

- The budget lines "vehicle running cost" and "vehicle hire" add up to Z$259,000 per year. The actual cost during 1988 and 1989 was Z$64,000 per year. We can see no justification for this fourfold increase.

- Considering SIDA's past experience of staff housing in Zimbabwe we are unable to recommend continued SIDA funding of this item.

- We do not support the proposed water quality monitoring programme. The recommended types of wells and pumps are thoroughly tested under various conditions as regards water quality. Regular routine testing will probably yield very little and rather create problems, especially with false positive results. This may cause closure of protected water sources, forcing people to use unprotected sources unnecessarily.

Mashonaland East

The Draft Project Proposal for Mashonaland East is basically a replica of the Manicaland programme. That programme has proved successful and an extension into Mashonaland East is therefore recommended

The Manicaland programme has now been going on for more than four years and there are many experiences on which one can draw when designing a new proposal for Mashonaland East

A reduction of the cement subsidy to 3 bags should be introduced from the start of the construction work We suggest that this should be after

8 months of preparations, i.e. around 1 March 1991. The rest of the subsidy should be 1 prefabricated ventpipe with fitted wire gauze and reinforcement for the squatting slab. Households opting for a regular Blair would have to buy the additional bags of cement themselves. All builders should be trained to build both low-cost and regular Blair latrines.

With a lower cement subsidy, and in most cases also less cement used for each structure, it is realistic to set targets higher than in Manicaland. We suggest that the Mashonaland East programme endeavours to cover all households in the province within a 10-year period.

The same target is suggested for school multicompartment latrines and hand washing tanks. Thus, 10% of primary schools are to be covered each year.

As an incentive to involve all households in each village we propose that villages with 100% coverage of Blair latrines should receive one set of non-local materials for showers at water points for each 40 families in the village.

Ample time should be taken to inform, motivate and train staff during the initial months. We suggest that the first few months should be devoted to compiling and analysing baseline data on existing water supplies and sanitary facilities. In order to allow detailed planning and follow up data should be compiled at village, ward and district level. A possible format for a data sheet is given in Appendix 6. If reliable information can be collected this exercise will provide a good basis for both planning, reporting and future reviews.

The use of maps in planning, implementation and follow up in the field of water and sanitation has been suggested before. Only few districts have adopted the idea. We suggest that an effort is made during the planning stage to introduce the use of maps on a routine basis as a tool in the day-to-day work, both at district and ward level. Maps are easily procured and other materials needed can be supplied through programme funding. The aim should be that each EHT has got the relevant set of maps (1:50000), with ward boundaries clearly marked, mounted on a piece of board in his/her office.

As support to the programme during the first year of planning, training and start up we suggest that Dr P. Morgan of BRL is attached as a part-time consultant.

With the experience from Manicaland we suggest that the Mashonaland East programme should aim at lower dependence on motorized transport from the outset. All EHTs should be provided with bicycles and given a bicycle allowance. For heavy transport SIDA should provide one lorry and for supervisory duties one small 4WD-vehicle (see section on Transport).

Comments in the previous section on the content of health and hygiene education and on housing are valid for Mashonaland East as well.

MONITORING, EVALUATION AND REVIEWS

The Manicaland programme is monitored by the Project Manager in Mutare, the Provincial Environmental Health Officer, in cooperation with the Project Officer (SIDA) at MoH head office. Monthly reports are sent from the province to MoH and quarterly reports are submitted to SIDA.

In our assessment report of February 1988 we recommended the introduction of "participatory evaluation" into the Manicaland programme. The theory and practice of participatory evaluation are explained in a book (produced by TALC, London, with assistance from SIDA): "Partners in Evaluation - Evaluating Development and Community Programmes with Participants" by Marie-Therese Feuerstein (Macmillan, London, 1986). We recommend the programme to invite Dr Feuerstein to Manicaland to conduct a training course in participatory evaluation methodology. A budget line should be included in the new project document. Contact address: Dr M-T Feuerstein, 49 Hornton Street, LONDON W8 7NT, England.

For Manicaland Phase IV and Mashonaland East Phase I we recommend joint annual programme reviews. To facilitate fieldwork during the consultancy missions preceding the reviews they should preferably be held before or after the rainy season, so that the field work can carried out. Another consideration is that the consultancy visit preceding the last review of the Agreement period should be held well ahead of the Health Sector Review of 1993. We propose the following schedule for the consultancies:

- April 1991 with an emphasis on the start-up of the new programme in Mashonaland East;

- September/October 1992 with a general mid-term assessment of both

the Manicaland and the Mashonaland East programmes as well as an appraisal for a possible continuation of the SIDA funded Health, Water and Sanitation Programmes after June 1993.

CONCLUSIONS AND RECOMMENDATIONS

General

The SIDA funded Manicaland programme has now been in operation for four years. The physical achievements are impressive. 20,000 household latrines, 160 multi-compartment school latrines and 1,500 protected wells and springs. Community participation has been one of the cornerstones of the programme. Mobilization of communities for water and sanitation activities has been very successful. Health education, after a slow start, is now progressing well.

In spite of these considerable achievements there are problems:

- There is a high dependency on donor funds. With present strategies the programme is not sustainable.

- The sanitation coverage is on average no more than 17%. Most people in rural areas have no other alternative than the bush.

- The chronic shortage of cement is restricting the progress of the programme.

- Mobilization activities have raised expectations high above the capacity of the programme (as determined by the availability of cement)

- The present transport system based on imported motor vehicles cannot be sustained by MoH as there is no foreign exchange available for the purchase of spare parts and replacement vehicles.

As a first attempt to solve these problems the cement consumption per latrine must be cut down. This will reduce dependence on donor funds and enable the programme to subsidize more households, thereby increasing the coverage.

From now on attention must also be directed at the sanitary situation of

households without a Blair latrine. This category is likely to include the poorest part of the rural population.

An innovative approach to the conveyance of people and goods should be introduced. The great potential of pedal power in moving people and goods cost-effectively over distances up to 20-40 km should be fully utilized.

The overall strategy should be to gradually reduce the need for foreign aid.

Manicaland

sanitation

- The SIDA funded subsidy for household latrines should with immediate effect be maximized to the subsidy given in the rest of Zimbabwe: 5 bags of cement, reinforcement for a single compartment latrine, 1 fly screen. (Value in current prices Z$101, compared to the present subsidy of Z$143.)

- A builder's manual for the single compartment Blair latrine should be printed and distributed to EHTs, VCWs and latrine builders.

- SIDA should support BRL's efforts to develop a low-cost version of the Blair latrine.

- During March - June 1990 the programme should make concerted effort to have all Blair latrine ventpipes fitted with the fly screens now available. By 1 July 1990 there should be no Blair latrine without properly fitted flyscreen(s).

- The programme should support efforts to develop latrines for disabled people. Programme staff should be given an opportunity to study the pilot latrines in Mutungagore ward (Makoni district).

water supply

- The pilot family well project may from Phase IV be included in the regular programme. The SIDA funded subsidy should consist of windlass and lid only.

- Deep wells and gravity flow systems should be left to DDF.

- More attention must be given to drainage. A manual should be prepared and EHTs trained in the theory and practice of drainage from wells and springs.

- Committees must be established for all water points already constructed under the programme. Non-functioning WPCs should be activated. From now on the existence of a duly constituted WPC should be a precondition for the delivery of the materials subsidy.

- Before starting any construction work the programme, represented by the EHT, and the local community, represented by the VIDCO, should sign a formal agreement specifying the rights and duties of each party. (See Appendix 4.)

health and hygiene education

- The ongoing series of workshops for extension staff, VCWs and local leaders should be continued and extended to cover all districts.

- VCWs should be trained in no-cost and low-cost methods of human excreta disposal to be able to assist households unable to construct a standard Blair latrine.

- The bulk of teaching aids and materials to be used at community level should be printed. Local production of handouts etc for workshops should use simple duplicating technology rather than photocopying.

human resource development

- The inclusion of no-cost and low-cost sanitation activities in the programme requires major rethinking. It should be supported by workshops to involve all programme staff.

- Inter district study tours should be organized to disseminate experiences from the successful training of women latrine builders, spring protection etc.

- The management training activities suggested in the project document should be implemented.

women's involvement

- Workshops at ward level should include support for women's involvement by conscientising the communities and extension workers as regards the expected levels of participation of women.

- The women builders programme should be extended to all districts and wards.

- MCCDWA extension staff should be solicited to support women builders in their work so that they can sustain the momentum and avoid drop-outs.

- 'There should be more female EHTs recruited to the programme. Their presence is a noticeable feature to both men and women in the community..

transport

- The MoH/SIDA Transport Study of November 1989 should be extended to include an analysis of transport needs within Manicaland-type programmes and a discussion of affordable alternatives for the conveyance of staff and construction materials.

monitoring and evaluation

- "Participatory evaluation" should be included as a regular part of the programme. An international expert like M-T Feuerstein should be called in to introduce the methodology.

Mashonaland East

MoH has put forward a draft proposal for a SIDA funded health, water and sanitation programme in Mashonaland East. The proposal is basically a replica of the Manicaland programme.

If a Mashonaland East programme is to be funded by SIDA we recommend the following:

- The new programme should cover the whole of Mashonaland East province and a start should be made in all districts simultaneously.

- The first eight months should be used for planning, compilation and analysis of baseline data, training of EHTs and other programme staff, health education, mobilization of local communities, formation of WPCs, training of local builders (women whenever possible!).

- The sanitation component should aim at covering all rural households within 10 years. The standard unit would be a low-cost Blair latrine of the type recently developed by BRL. Subsidy: 3 bags of cement, 1 pre-fabricated ventpipe with fitted wire gauze and reinforcement for squatting slab. (Households opting for a regular Blair latrine receive only the subsidy for a low-cost latrine.) Builders should be trained to build low-cost as well as regular Blair latrines.

- Multi-compartment latrines and hand washing tanks to be built at 10% of primary schools per year.

- Villages with 100% coverage by Blair latrines should receive one set of non-local materials for showers at the water points for each 40 families in the village.

- The water supply component would be as in Manicaland.

- For programme related transports non-motorized vehicles should be used whenever possible. All EHTs should have bicycles. For other transport requirements we suggest that SIDA provides one lorry and one small jeep.

- If Dr P. Morgan leaves BRL we suggest that he is hired as a consultant to the Mashonaland East programme for one week per month.

S I D A
Infrastructure Division
Water Section
M Johanson

DRAFT
Terms of reference
1989-11-20

Mid-term Evaluation of the Manicaland Health, Water and Sanitation Programme, Zimbabwe

Background

The Manicaland Health, Water and Sanitation Programme is an ongoing Ministry of Health project in Manicaland Province in order to implement the Zimbabwe Health for All Action Plan. SIDA has supported the Programme since 1985 within the framework of the Swedish Health Sector Support to Zimbabwe.

The objectives of the Programme are to improve the living conditions in the communal areas through the provision of protected water supplies, improved sanitation facilities and health education for better hygienic practices.

In accordance with the Project Document a mid-term evaluation of the Programme shall be made by SIDA in January 1990 in order to assess programme results. This evaluation shall form the basis for the identification of a possible continuation of the programme to be financed by SIDA after 30 June 1990.

Objectives

The objectives of the mid-term evaluation are to assess the relevance of set objectives and to review performance in implementation of the Manicaland Health, Water and Sanitation Programme. Furthermore, identification of a possible continuation of the Programme after 30 June 1990 shall be made.

Scope of work

The Mission shall review performance in implementation of the Programme based on relevant Project Documents, Workplan and Budgets. An assessment of the relevance of set objectives should be made as well as of to what extent the objectives of the Programme are being achieved. Specific attention should be given to the following issues:

- Functioning and utilization of the domestic water supply and sanitation facilities provided with special

emphasis on siting, quality of installation, maintenance and repair.

- Functioning and utilization of the health education provided.

- Coverage of the services provided through the programme.

- Functioning of community participation in Programme activities, particularly the involvement of women and children.

- School sanitation activities and its likely effects.

- Effects of the materials subsidy given to the communities.

- Organizational and administrative feasibility of Programme planning, implementation and monitoring.

- Coordination of the Programme with similar projects undertaken in the Province.

- Cost-effectiveness, unit costs of production, per capita costs for operation and maintenance.

- Implications on programme activities caused by the recent shortage of cement.

Eventual needs for additional studies should be identified. Based on the analysis of past performance the Mission shall prepare a report with findings and recommendations for a continuation of the programme starting 1 july 1990 including selection of project activities, choice of methods and technology, indication of scale and location, formulation of objectives and determination of dimensions in which targets will be set, and considerations related to organizational set-up and staff requirements. The report shall specifically analyse the performance in terms of sustainability, affordability, repliability and reliability.

Time schedule and Reporting

The work should take place in Zimbabwe during the period January 6 to February 1, 1990. In addition two weeks in Sweden could be utilized for preparation and report writing. The Mission shall summarize its findings in a report and a project document written in English. The documents should be submitted to SIDA not later than

February 19, 1990. Main conclusions should be presented to and discussed with the Ministry of Health and SIDA in Harare, prior to the Mission's departure from Zimbabwe.

Manpower

The Mission shall comprise of a team appointed by SIDA including expertise in technical and health aspects of water and sanitation projects. A team leader shall be responsible for the work carried out by the Mission. The team shall closely cooperate with the Ministry of Health, i.e. Director of Health Inspectorate, Water Decade Officer, World Bank Adviser and Provincial Health Inspector, Manicaland.

Other aspects

While in Zimbabwe the Mission works under the direction of the SIDA Development Cooperation Office.

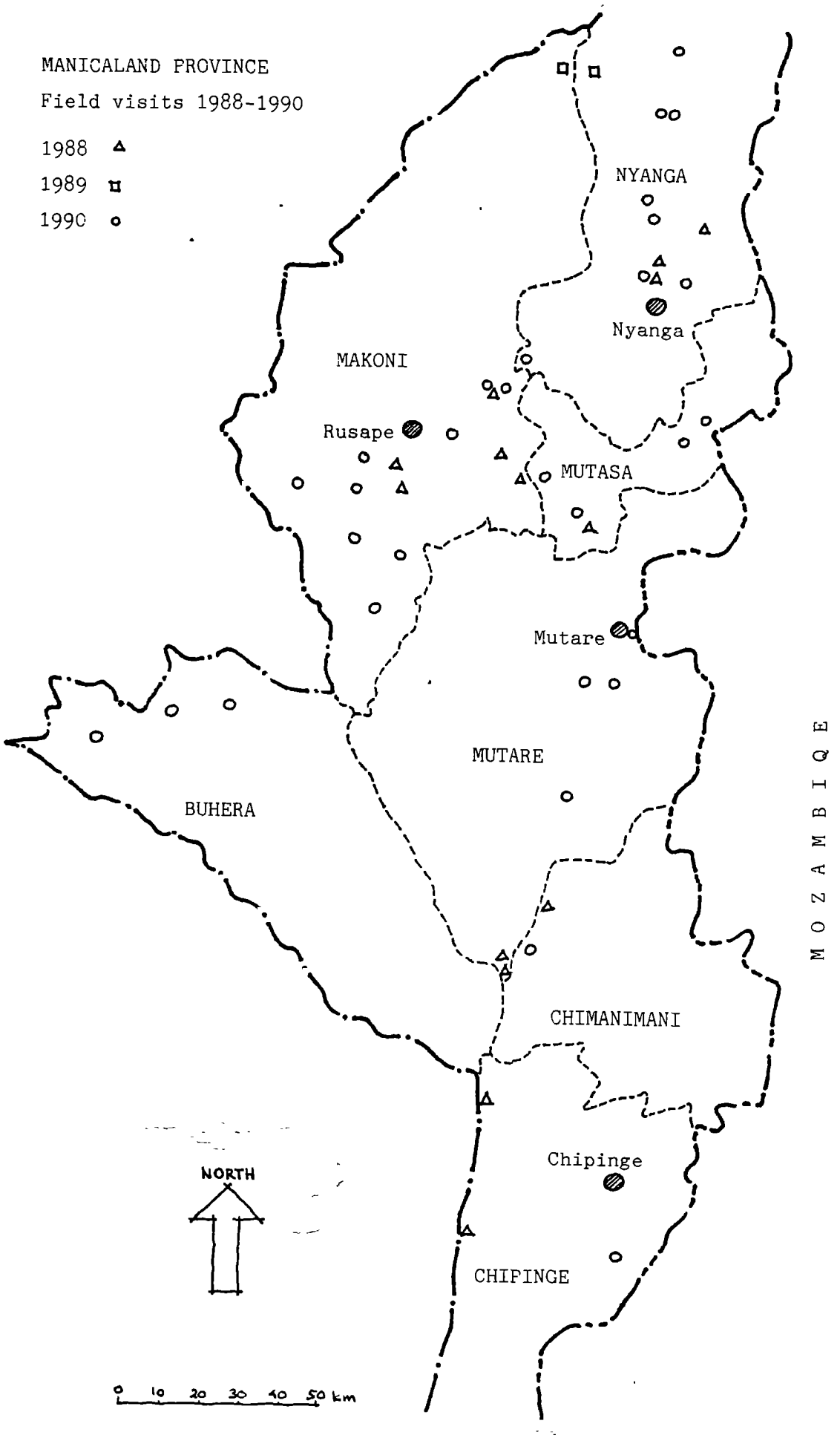
ITINERARY, MEETINGS AND FIELD VISITS

1989

30 Nov	arr HARARE (UW) meeting SIDA/DCO
1 Dec	dep HARARE arr JULIASDALE conference MoH, Env Health Department
2 Dec	dep JULIASDALE arr HARARE
4 - 9 Dec	meetings MoH, BRL, MLGRUD, SIDA/DCO
11 Dec	dep HARARE arr MARONDERA meeting PEHO's office dep MARONDERA arr HARARE
12 Dec	field visit to BRL pilot area, Henderson
13 Dec	meetings MoH, SIDA/DCO
14 Dec	dep HARARE (UW)

1990

6 Jan	arr HARARE (UW and PO)
8 Jan	meetings MoH, SIDA/DCO
9 Jan	dep HARARE arr MUTARE meeting PEHO's office
10 Jan	meeting PMD/PEHO
11 Jan	workshop in Mutare; Mutare & Mutasa districts
13 Jan	field visits Mutasa district, Gonde and nyakutara wards
15 Jan	field visits Mutare district, Munyoro ward and Mutasa district, Samaringa, Sahumani and Mpotedzi wards
16 Jan	workshop in Rusape; Makoni and Nyanga districts
17 - 21 Jan	field visits in Buhera district (DS)
17 Jan	field visits Makoni district, Denzva, Mutungagore, Dumbamwe and Gwindingwi wards
18 Jan	field visits Makoni district, Ngowe and Nehanda wards
19 Jan	field visits Nyanga district, Gonde, Nyajezi, Tongogara and Nyamutewera wards
20 Jan	field visits Nyanga district, Nyanga South resettlement area
22 Jan	workshop at Birchenough Bridge; Buhera, Chimanimani and Chipinge districts
23 Jan	debriefing PMD, Mutare dep MUTARE arr HARARE meeting MoH
24 - 30 Jan	meetings MoH, SIDA/DCO
31 Jan	dep HARARE (UW and PO)


MANICALAND PROVINCE
Field visits 1988-1990
1988
1989
1990
NYANGA
Nyanga
MAKONI
Rusape
MUTASA
Mutare
MUTARE
BUHERA
CHIMANIMANI
Chipinge
CHIPINGE
MOZAMBIQUE
NORTH
0 10 20 30 40 50 km

LIST OF PEOPLE MET

Bangira, DR	EHT, Mutare
Bennedich, C	Sr Programme Officer, SIDA, Stockholm
Berggren, B	Resident Representative, SIDA/Harare.
Björnheden, T	MOH (Mashonaland East)
Bruzelius, A	SIDA, Stockholm
Chikuru, PG	EHT, Nyanga
Chipise, SS	EHT, Makoni
Chitowa, T	Builder Trainer
Chiwetu, M	EHT, Makoni
Faranisi, ST	EHT, Makoni
Gonzo, R	EHT, Chimanimani
Goora, W	DEHO, Chipinge
Gumbo	Resettlement Officer' Mutare
Gutu, LR	EHT, Nyanga
Jenje, DP	DEHO, Mutasa
Karichi, P	EO, PMD office
Kasinganeti, J	SEHT, Buhera
Katsande, TE	DEHO, Mutare
Kolstad, T	MLGRUD, Mutare (NORAD)
Kujeke, SL	A/Medical Secretary
Kurera, K	EHT, Chipinge
Låftman, E	WID Officer, SIDA/Harare
Madzowa, K	EHT, Chimanimani
Mahundi, K	EHT, Mutare
Makayi, A	EHT, Mutare
Makoto	EHT, Mutasa
Manambara, L	PHSA, Manicaland
Mandizha, PD	DEHO, Nyanga
Mapangisana, JT	EHT, Chipinge
Mapuranga, ML	HEO (SIDA funded programme), Manicaland
Maputire, M	EHT, Chipinge
Marambe, ES	Provincial Pharmacist
Mashamba, A	Health Education Officer
Matayire, PM	EHT, Makoni
Matika, J	EHT, Chimanimani
Matiringe, CA	Ag PEHO, Manicaland
Matiza, Z	EHT, Mutare
Mhaka, IT	SEHT, Nyanga
Morgan, P	Ag Director, BRL
Moyo, D	DEHO, Chimanimani
Mpofu, F	EHO, Chimanimani
Mpofu, LT	EHT, Nyanga
Mtemeli, D	HEO, Manicaland
Mudzengerere, C	EHT, Makoni
Muginambani, SA	EHT, Mutare
Mukundu, T	EHT, Chimanimani
Munovangira, JT	EHT, Mutare
Murepa, E	EHT, Buhera
Murima, A	EHT, Makoni
Muronzi, NF	EHT, Mutasa
Mushuna, O	EHT, Nyanga
Musimwa, P	EHT, Makoni
Musingarabwi, S	PEHO (Mashonaland East)
Mutangi, DG	EHT, Mutasa
Mutisi, A	EHT, Mutasa

Mutonhere, T	EHT, Chipinge
Muzanenhamo, C	SEHT, Buhera
Mvududu, J	Director, Environmental Health Dept, MoH
Nilsson, N-G	Sr Programme Officer, SIDA/Harare
Ntange, P	EHT, Mutare
Nutowo, L	Nutritionist
Nyamadzawo	EHT, Nyanga
Nyamukungwa, E	EHT, Makoni
Nyangani, S	EHT, Mutasa
Nyasango, TR	PEHT (Decade Officer), Manicaland
Nyatsanza, J	Provincial Nutritionist
Nzirawa, F	PEHT, Nyanga
Rajab, SH	MOH, Manicaland
Runganga, P	PEHT, Chipinge
Ruwodo, E	EHT, Mutasa
Sanyatwe, P	EHT, Buhera
Sasa, W	Adm.Ass, MoH (SIDA funded programmes)
Soko, F	Sr Psychiatric Officer, Manicaland
Synnerholm, B	Sr Programme Officer, SIDA/Harare
Tandi, TM	SEHT, Makoni
Tandi, WM	SEHT, Mutasa
Tangwena, A	DEHO, Buhera
Tsoka, S	HEO, Manicaland
Wangen, G	NCU, National Coordinator
Zimunya, OM	SEHT, Mutare
Zondo, N	Administrative Assistant

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VOLUNTARY AGREEMENT

VOLUNTARY AGREEMENT BETWEEN THE COMMUNITY BASED HANDPUMP REHABILITATION AND MAINTENANCE PROJECT (CALLED "THE PROJECT") AND

THE VIDCO HANDPUMP SUB-COMMITTEE OF _____ COMMUNITY WHO REPRESENT THE INTERESTS OF THE HANDPUMP USERS IN THAT COMMUNITY (CALLED "THE COMMUNTIY").

This Agreement defines the roles and responsibilities of the project and community with regard to pump installation and rehabilitation and maintenance of the pump.

THE PROJECT SHALL BE RESPONSIBLE FOR THE FOLLOWING:-

The DDF Field Officer for water will bring a team consisting of a DDF Handpump Mechanic or Pumpminder(s) and a concrete mason (builder) to the pump in order for them to carryout the following tasks with community assistance:-

1. Repair the handpump and replace all defective or worn parts. Handpumps will be standardised as far as possible;
2. Record all pump details for completion of the District Pump Record Card;
3. Repair erosion and place stone pitching;
4. Construction concrete apron (6 bags of cement) and cattle trough (6 bags of cement) as required;
5. Construct drain and/or soakaway;
6. Construct fence;
7. Construct washing slab (12 bags of cement)
8. Construct slabs for separate bathrooms if required by the community.

The project will provide materials needed such as handpump spares, 25 bags of cement, 26 fencing poles, 240m of barbed fencing wire, nails and 2 spanners and grease for the Caretaker.

The LGPO will, with assistance from the Pumpminder, train the sub-committee and Caretaker and provide her with the 2 spanners and a certificate.

THE COMMUNITY SHALL BE RESPONSIBLE FOR THE FOLLOWING:-

The community will provide where possible, any information which the project may require in planning the project.

The VIDCO Handpump Sub-Committee, which will consist of 3 women and 1 man, shall represent all handpump users and shall be responsible for the management of the handpump.

The Handpump Sub-Committee will elect one of the female members to be the volunteer Pump Caretaker.

THE ROLE OF THE HANDPUMP SUB-COMMITTEE IS TO ORGANISE THE COMMUNITY TO CARRY OUT THE FOLLOWING:-

1. Repair erosion around the handpump;
2. Collect stones for stone pitching to dreduce subsequent erosion;
3. a) Before the builders arrive to the pump site; Collect sand and aggregate if available locally for concrete;
   b) Mould bricks for construction of headworks;

LOCAL MATERIALS:

WASHING SLAB:	500 bricks
	18 full wheelbarrows of coarse sand
	3 full wheelbarrows of fine pit sand
	27 full wheelbarrows of coarse aggregate
CATTLE TROUGH:	6 full wheelbarrows of coarse sand
	12 full wheelbarrows of aggregate

180 ℓ of water

APRON: 5 full wheelbarrows of sand
10 full wheelbarrows of coarse aggregate
150 ℓ of water

5. Assist the builder in construction of headworks;
6. Construct separate bathrooms if required by the community;
7. Construct and maintain a fence around the handpump using barbed or meshed wire provided by the project;
8. Assist the DDF Pumpminders during repairs, rehabilitation and subsequent repairs;
9. Generally maintain the pump surroundings in a clean and healthy condition;
10. Ensure that people especially children use the pump properly and with care.

THE ROLE OF THE VOLUNTEER CARETAKER WILL BE AS FOLLOWS:

1. Keep a record of households using the borehole;
2. Be responsible for a simple tool kit, (i.e. 2 spanners and grease);
3. Carryout minor maintenance such as bolt tightening and greasing;
4. Ensure that any problems such as low discharge, unusual noises, or breakdowns are reported to the Pumpminder as soon as possible;
5. Keep a record of the Pumpminder's visits to the pump.

The Sub-Committee and/or community should preferably cultivate, -- an orchard or vegetable garden using the waste water from the pump. The garden should be fenced using local materials.

The community undertakes to keep the pump and headworks clean and in good working order and to repair any damage (from cattle, misuse, erosion etc) to headworks or fence, and to report damage or breakages of the pump to the Pumpminder and/or DDF maintenance team stationed at _____

AVERAGE UNIT COST OF A BLAIR LATRINE. DECEMBER 1989. ZIMBABWE DOLLARS.

1 Single Blair latrine

Household cost

Bricks, 2500 at 3 c	75
Builders' charges	50
Carting river sand & aggregate	60
Pit excavation (ave. 4 m)	60
Labour during construction	20
Food for builder	10
	275

Donor input

6 bags of cement	90
Weld mesh, 1.5 m	13
Chicken mesh, 1.5 m	9
Flyscreen gauze	4
	116

Government input

Supervision	50
	50

TOTAL	441

2 Dual Blair latrine

Household cost

Bricks, 3500 at 3 c.	105
Builders' charges	70
Carting river sand, aggregate	80
Pit excavation	80
Labour	20
Food for builder	15
	370

Donor input

7 bags of cement	105
Weld mesh, 3 m	27
Chicken mesh, 3 m	18
Flyscreen gauze	8
	158

Government input

Supervision	50
	50

TOTAL	578

3 Multicompartment latrine (average 10 squat holes)

School contribution (community)

Bricks, 15000 at 3 c.	450
Builders' charges	500
Carting river sand, etc	300
Labour during construction	100
Pit excavation (ave. 4 m)	300
	1650

Donor input

60 bags of cement	900
Weld mesh, 15 m	134
Chicken mesh, 15 m	89
Flyscreen gauze	40
	1163

Government input

Supervision	250
	250

TOTAL	3063

UNIT COST FOR SHALLOW WELL PROTECTION. DECEMBER 1989. ZIMBABWE DOLLARS.

1 Bucket pump on hand dug well

Community input	
Bricks, 700 at 3 c.	21
Well excavation, 3 m	45
Carting river sand, etc.	30
Construction labour	30
	126
Donor input	
Bucket pump	365
5 bags of cement	75
Casing, 3 m depth	54
	494
Government input	
Supervision	30
	30
TOTAL	650

2 Blair pump on hand dug well

Community input	
Bricks, 700 at 3 c.	21
Well excavation, 3 m	45
Carting river sand, etc.	30
Construction labour	30
	126
Donor input	
Blair pump	300
5 bags of cement	75
	375
Government input	
Supervision	30
	30
TOTAL	531

3 Bucket pump on tube well

Community input	
Bricks, 60 at 3 c.	2
Well excavation, 3 m	15
Carting river sand, etc.	20
Construction labour	15
	52
Donor input	
Bucket pump	365
5 bags of cement	75
Casing, 3 m depth	54
	494
Government input	
Supervision	30
	30
TOTAL	576

4 Blair pump on tube well

Community input	
Bricks, 60	2
Well excavation, 3 m	15
Carting river sand, etc.	20
Construction labour	15
	52
Donor input	
Blair pump	300
5 bags of cement	75
	375
Government input	
Supervision	30
	30
TOTAL	457

UNIT COST FOR DEEP WELLS AND SPRING PROTECTION. DECEMBER 1989. ZIMBABWE DOLLARS.

1 Deep wells

Cement for lining, av. depth 15 m (19 bags)	285
Cement for headworks, 12 bags	180
Handpump	800
Salaries, 3 months (wellsinkers, pump fitter, and driver)	1870
Fencing, barbed wire and poles	92
Transport	450
Tools, equipment, protective clothing	50
Explosives	70
TOTAL	3797

2 Spring protection

Community input

Bricks for washing slab, 700 at 3 c.	15
Carting stones, river sand, aggregate	100
Construction labour	100
	215

Donor input

17 bags of cement	255
Polypipe, average 20 m	65
Galvanised iron pipe & PVC pipe	83
Bibcock	20
	423

Government input	50
	50
TOTAL	688

BASE LINE SURVEY

.....District

WARD	VILLAGE	Unprotected water sup. US	UW	Protected water supplies BH	PS	DW	SW	FW	Sanitation BVIP	Pit	NS
Munyoro ward	Dzingirai village										
	.....village										
	.....village										
	.....village										
	.....village										
	.....village										
	Ward total										
.....ward	.....village										
	.....										
	.....										
	.....										
	.....										
	.....										
	Ward total										

US - Unprotected spring
UW - Unprotected well
BH - Bore hole
DW - Deep well
PS - Protected spring
SW - Shallow well
FW - Family well
BVIP - Blair latrine
Pit - Pit latrine
NS - No sanitary facility

ABBREVIATIONS

AGRITEX	Department of Agricultural, Technical and Extension Services
BRL	Blair Research Laboratory
CMED	Central Mechanical Equipment Department
DA	District Administrator
DCO	Development Cooperation Office (SIDA)
DDC	District Development Committee
DDF	District Development Fund
DEHO	District Environmental Health Officer
EHT	Environmental Health Technician
GOZ	Government of Zimbabwe
MCCD	Ministry of Cooperatives and Community Development
MCCDWA	Ministry of Cooperatives, Community Development and Womens' Affair
MLGRUD	Ministry of Local Government, Rural and Urban Development
MLARS	Ministry of Lands, Agriculture and Resettlements
MOH	Ministry of Health
NAC	National Action Committee
NGO	Non Government Organization
NMWP	National Master Plan for Rural Water Supply and Sanitation
PA	Provincial Administrator
PDC	Provincial Development Committee
PEHO	Provincial Environmental Officer
PEHT	Principal Environmental Health Technician
PHEO	Provincial Health Education Officer
PMD	Provincial Medical Director
SEHT	Senior Environmental Health Technician
SEK	Swedish Kronor
SIDA	Swedish International Development Authority
VCW	Village Community Worker
VIDCO	Village Development Committee
WADCO	Ward Development Committee
WCC	Ward Community Coordinator
WPC	Water Point Committee

Illustrations (all except 5 and 8):
Hans Mårtensson