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**AFRICARE WSSH PROJECT**  
**in Ntchisi and Nkhata Bay Districts**  
**Malawi**

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**Results from the**  
**Baseline Survey**

**Africare**

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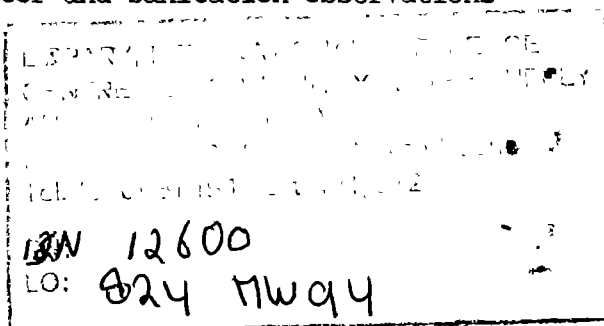


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## ABBREVIATIONS

#	= number
CBM	= Community Based Management
CDA	= Community Development Assistant (Government extension worker)
hh	= household
HSA	= Health Surveillance Assistant (Government extension worker)
MK	= Malawi Kwacha; MK 1.00 = U\$ 0.22 (rate August 1993)
ORS	= Oral Rehydration Solution: dehydration treatment in case of diarrhoea
sanplat	= Sanitary Platform: a cemented platform of 60*60 cm, with a tight fitting lid, elevated foot rests and a smooth inclining surface, used for the improvement of pit latrines
TA	= Traditional Authority: sub-area of a district (the total project area comprises four TAs)
U\$	= American Dollar; U\$ 1.00 = MK 4.50 (rate August 1993)
USAID	= United States Agency for International Development
VLOM	= Village Level Operation and Maintenance
WSSH	= Water, Sanitation and Hygiene Promotion Project



## 1 INTRODUCTION

This baseline survey has been conducted under the Water, Sanitation and Hygiene Promotion (WSSH) Project, which Africare is implementing in Ntchisi and Nkhata Bay districts, Malawi. It is a rural development project, with an implementation period of three years. The target area comprises TA Chikho, TA Nthondo and part of TA Chiloko in Ntchisi, and TA Timbiri in Nkhata Bay; the total number of villages is about 200.

This project is part of Africare's Regional WSSH Project in Malawi, Zambia and Zimbabwe. Africare is implementing this project under an USAID matching grant: half of the budget is provided by USAID (matching grant FAO-0158-A-00-2047-00), the other half is provided by various private donors.

The overall goal of the project is to improve the health of rural people by reducing the incidence of water- and sanitation related diseases. This will be achieved by improving the access to safe water and hygienic sanitary facilities and by promoting hygiene practices and the proper use of the new facilities.

The project aims at a high level of community participation in all phases of the project, in order to safeguard the sustainability of project outputs at the village level. This requires an active involvement of both men and women, in decision making, planning and implementation of all project activities in their respective villages. This, at its turn, requires a participatory project approach, in which the village and the project collaborate as partners.

The project aims at a close collaboration with the Government, in order to enhance the incorporation of the project outputs into the existing infrastructures. At the village level the Africare technicians work hand-in-hand with the government extension workers from Community Services, Health and Water Department. At the district and the national level, coordinating committees were formed, with representatives from the same Ministries, for regular discussion on project progress and implementation strategy.

The project technology on water supply concentrates on protected shallow wells and springs. A community based management (CBM) programme will be implemented in all villages. The wells will be equipped with a NIRA handpump, which is a village level operation and maintenance (VLOM) type of pump. The choice for a NIRA pump has been made in collaboration with the Ministry of Works, Water Department. The hygiene promotion programme for water focusses on proper use of the protected sources and hygienic water handling.

The project technology on sanitation concentrates on sanplat-latrines. A sanplat is a 60\*60 cm cemented platform with a tight fitting lid, elevated footrests and a smooth inclining surface. The hygiene promotion programme for sanitation focusses on promotion of sanplat-latrines, increasing the total latrine coverage and promoting their proper use and related hygiene practices.

The results of this baseline survey are used for the elaboration of a detailed project implementation strategy.





## 2 OBJECTIVES AND METHODOLOGY

Before the actual start of project implementation, a baseline survey was carried out in 20 villages, in August-September 1993.

The two main objectives of this survey were:

- \* for Africare: to get to know the project areas before the actual start of project implementation at village level
- \* for the target population: to get to know the project in an early stage, and to give their input on the project design

In this way, the survey was providing baseline information, but at the same time it enhanced community participation in the design of the project.

In detail, the baseline information collected is used for various purposes:

- \* general refinement of the project implementation strategy
- \* design of community participation strategy
- \* technical design of the project and technology choice
- \* design of hygiene promotion program
- \* training of field staff
- \* selection of indicators for monitoring and evaluation purposes

The project aims at a high level of community participation, this is participation of both men and women, in all stages of the project. As this survey was the first village level project activity, it was important to conduct the survey in line with this project approach. Therefore the survey was designed in a way that it aimed at:

- \* active participation of both men and women, while meeting with them separately and together at various occasions, formally and informally
- \* providing full information on the project, through various channels and at various moments
- \* asking the view of both men and women on how the project should look like, at various occasions and in various ways
- \* active participation of the enumerators, in asking their views and suggestions for project design - as their experiences during the fieldwork could be valuable for the project

This project approach was also reflected in the logistics of the survey, for instance in the fact that the enumerators lived in the villages during their fieldwork.

A total number of 8 enumerators, 2 of which were women, carried out this survey. The actual survey took 7 weeks: 1 week of training, 5 weeks of field work and 1 week of data recording. The fieldwork was supervised by the 2 field coordinators of the project.

A sample of 20 villages was included in this survey: 12 villages in Ntchisi district and 8 villages in Nkhata Bay district. This is 10% of all villages in the project area. Those villages were selected randomly from the map, and afterwards checked on their accessibility. The list was discussed with district officials, after which a community development assistant (CDA) approached the village leaders to ask for their cooperation.



In each village the survey consisted of five components:

- \* interview with key informants
- \* description of water sources
- \* household interview
- \* water and sanitation observations
- \* village meeting

During the interview with key informants the survey and the project were introduced and some general information on the village was collected.

For the description of water sources the enumerators visited the sources, giving a detailed description of the technical and social characteristics of each.

The household interview contained questions on general information on the household, domestic water use and water availability, technical description of latrines and user attitudes, and health and hygiene knowledge and practices. During those interviews the enumerators addressed their questions to the women.

The survey households were selected randomly, based on a list of all households provided by the village headman, through the CDA. A total number of 20-30 households were interviewed in each village; this is a sample size of 20%-35% per village.

For the water and sanitation observations the enumerators received a checklist of five hygiene practices, on which they registered their findings during the one-week stay in the village. They were also requested to note other relevant observations made during this period.

The village meeting is held before the enumerators leave the village. During this meeting, an opportunity is given to all villagers to ask questions and give remarks on the project. Both the Africare field coordinators and the CDA attended this meeting.



### 3 RESULTS

#### 3.1 GENERAL

##### Population and sample size

With this survey 10% of all target villages have been covered: 12 villages in the Ntchisi project area, being 4 in each of the 3 TAs, and 8 villages in the Nkhata Bay project area. This gave a good introduction of the project in both target areas. Within these survey villages 20-35% of all women have been involved in the household interviews.

In Ntchisi, the survey villages have an average population of 58 households, being smaller in TA Nthondo and TA Chikho, and somewhat larger in TA Chilooko. In the survey villages in Nkhata Bay the average population is 152 households, being almost three times as large as the villages in Ntchisi.

##### Demographic and income data

People live scattered, not in condensed villages. In Ntchisi, the project area is highly deforested.

In both project areas, 10% of all households are female headed. This means that a considerable number of women have a highly increased workload and responsibility in managing a household on their own.

Cash income levels are low: the median yearly household income is about MK 375 for both project areas (being U\$ 85 at the rate of August 1993). This means that half of the population had an income below MK 375 per year, while 25% even had an income below MK 150 per year. However, in almost all villages a number of families were found in the survey sample with a considerably higher income, up to ten times the median income or more. The levels of income showed large differences, even within communities.

Most families depend on subsistence farming. Cash income is mostly generated through the marketing of agricultural products. In the Ntchisi project area people sell both food crops and cash crops (mainly tobacco), while additional income is earned through piece work and beer brewing. In the Nkhata Bay project area mainly food crops are marketed, no cash crops, while additional sources of income are found in the marketing of fish and in piece work. This means that people in both project areas highly depend on the agricultural production system, for both their food and their income - and with this, they highly depend on the rainfall.

In both project areas, 1 in every 3 households has an operational radio and 1 in every 10 households has a bicycle. Differences between villages are considerable (radios: 5-55%; bicycles: 0-30%). Ox carts are only found in some survey villages in Ntchisi, mainly in TA Chilooko. Houses with cemented floors were found in TA Timbiri (Nkhata Bay) and in TA Chilooko (range: 0-15% and 0-5% respectively).



### 3.2 WATER

In general, there is a large variety of water sources in almost all survey villages. However, many sources are not perennial and only few sources are protected.

#### Domestic water use

Only 5% of the women collect their drinking water from a protected water source (all handpumps), 95% of the women depend on unprotected sources: 55% collect water from an open well, 20% from a spring and 30% depend on water from a stream.

About half of the households drawing water from a pump, collect water from 1-2 additional unprotected sources as well.

Domestic water consumption is about 15 liters per person per day. In almost all villages additional water is used in streams. In Nkhata Bay, water consumption is slightly higher, due to the processing of the cassava, the common staple food as compared to maize in Ntchisi.

Total domestic water consumption is about 4 cubic metres of water a day in an average village in the Ntchisi project area (285 inhabitants) and 12 cubic metres a day in an average village in the Nkhata Bay project area (820 inhabitants).

For most of the women, the distance to their source of drinking water is between 100 and 500 m. However, for 20% of the women this source is more than 500 m from their homes, which means that those women have to spend more than one hour a day per household to collect water.

Women's work load related to water collection, can also be expressed in the weight which they have to carry: 15 liters of water per person per day means 70-80 kgs each day for an average household.

#### Water scarcity: scope of the problem and village level solutions

In the dry season 55% of the women face problems due to water scarcity. This situation varies from village to village: in 6 of the 20 survey villages water scarcity was a problem for 75-100% of the women.

Most women facing water scarcity, go to other sources (60%). In general most of those women shift from wells and springs to streams, and from a combination of sources to one single source. These sources of their second choice have water of a worse quality and/or are less accessible due to longer walking distances. The actual situation is different in each village, some examples:

- in 3 villages, the number of women relying on a stream increased to 75-95%
- in 3 other villages, the number of women relying on a source more than 500 m from their home increased to 50-75%
- in 3 other villages, the women had to shift from a non-perennial handpump to an unprotected water source.





In addition, 20% of the women spend more time on water collection at their original sources, due to a longer recharge time

Only 5% of the women said that they use less water.

In 15 of the 20 villages people are cleaning and deepening wells or digging new wells to cope with the water scarcity. In 6 villages it was a combined activity of men and women, in 9 villages only men were involved.

Although in 75% of the villages wells are cleaned in the dry season, this is generally not enough to resolve the water problem. This is mainly due to a lack of tools and skills to dig in rocky or sandy soils. The remaining water problems continuing throughout the dry season are then faced by the women, on a day-to-day basis.

### Description of existing water sources

#### **Handpumps**

A total number of 9 handpumps were found in the survey sample: 4 were installed very recently and all operational; of the other 5 pumps, 4 were found to be either broken down or not functioning well or not-perennial (80%) and only 1 was functioning well (20%). At least 4 different types of pumps were found.

With the 8 pumps that are at least giving some water during some months of the year, the coverage comes to 0.2 pumps per 250 inhabitants for both project areas.

All pumps are used by part of the village only: the average user population consists of 35 households per pump (range: 10-65), of which 20 households also use 1-2 additional unprotected water sources. This means that the mean coverage of the operational pumps comes to 35% of a village (average population is 96 households per village for the total project area).

#### **Shallow wells and springs**

All wells were rather shallow: none was found to be deeper than 5 metres. In general, the wells are not lined, except for 2 wells in a village in TA Nthondo (Ntchisi). About half of the wells are not perennial.

About 30% of the wells are communal, the others are privately owned family wells.

Most of the springs are found in TA Chikho (Ntchisi) and TA Timbiri (Nkhata Bay), with an average of 2 per village. In the survey villages in TA Chikho even more springs than wells were found. More than half of the springs are perennial.

None of the springs is protected; women draw water from a shallow pond in which the water is collected.



## Streams

All villages except one, have access to at least 1 stream. Most of the streams are perennial, although the water might turn muddy and coloured after the rains.

Most streams are shared by different villages.

## Overview of unprotected water sources

An 'average Ntchisi village' has 7 water sources, being 2 communal wells, 3 family wells, 1 spring and 1 stream, for 285 inhabitants. An 'average Nkhata Bay village' has 15 water sources, being 2 communal wells, 7 family wells, 2 springs and 4 streams, for 820 inhabitants. Differences between individual villages are large.

## 3.3 SANITATION

### Latrine coverage

The actual latrine coverage in both project areas is 50%. These are all traditional, non-improved, pit latrines.

Sanplat-latrines were only found in two survey villages in TA Chilooko (Ntchisi) in an area previously covered by another sanitation project. In those two villages, the total latrine coverage had increased to 80%, while 45% of those latrines were sanplat-latrines.

The latrine coverage has increased strongly since 1991/1992, when the country was faced with outbreaks of cholera and bloody diarrhoea. In a response, much attention was given to diarrhoea prevention, including the promotion of latrines. In 1990 the latrine coverage was 17%, while now, 3 years later, it has increased to 50%. The actual construction rate (1992/1993) is estimated at 80 latrines per 500 households per year.

### Women's attitude to latrines

Women with access to a latrine were asked to indicate the advantage of using a latrine: they mentioned 'health', 'privacy' and 'comfort'. In this, 'comfort' refers to distance, shelter and cleanliness. For sanplat-latrines it also refers to safety.

For the women in the Ntchisi project area 'health', 'privacy' and 'comfort' all turned out to be equally important. The women in the Nkhata Bay project area mentioned 'health' more often than 'privacy' and 'comfort'.



When indicating the additional advantages of a sanplat, the women with a sanplat-latrine mentioned: a sanplat is easy to clean, it is strong, it is long lasting and there are no flies.

Women without access to a latrine were asked to indicate why their household did not have a latrine. As seen by those women, the main reason can be summarized as a lack of priority by men to dig a pit and construct a latrine (65%). Other minor reasons indicated were: soil problems (mainly in the Nkhata Bay area: 15%) and a general lack of awareness (mainly in the Ntchisi area: 20%). In 10% of the households a latrine was under construction.

#### Characteristics of existing latrines

As stated before, the existing latrines are traditional, non-improved pit latrines. They all have one compartment. The pits are not lined (1% only).

Almost all shelters are made from locally available materials. Generally the shelter has a roof (90%), which is thatched (95%), and the floor is made from mud, smeared (80%) or not. In the Ntchisi project area the walls are generally made from mud (80%), while in the Nkhata Bay project area both mud (35%) and bricks (55%) were found.

Most of the latrines are build by men from the family. Builders were involved in 5-10% of the latrines only, apart from TA Chikho (Ntchisi) where builders are more common (30%).

The women with access to a latrine were asked which improvements they would like to see. About half of the women were happy with the existing facility. The others wanted the quality of the shelter to be improved (25%), like repair of a leaking roof, or wanted a sanplat to be installed (20%). The improvements on the shelter can be related to the importance of 'comfort' as an advantage of latrines. The relatively low demand for sanplats can be explained from the limited exposure which the women have had to this new technology.

#### Latrines and hygiene

The installation of a sanplat is a real hygienic improvement: on the sanplat-latrines 70% was indicated as 'clean', against 15% of the non-improved latrines (observations by the enumerators).

It was found that not any household had water for handwashing available near the latrine. This was observed in both project areas.

For non-improved latrines, the enumerators reported the presence of flies and poor ventilation, resulting in a bad smell. Both problems will be resolved by the installation of a sanplat.

The enumerators also reported:

- bad siting of several latrines, even close to kitchens
  - mothers washing napkins in streams that were also used for domestic purposes
- These problems ask for attention during hygiene promotion sessions.



### 3.4 HEALTH AND HYGIENE

#### Domestic water handling

In 1 out of every 3 households the container from which people take their drinking water, is not covered. There is a large difference between villages: in the Ntchisi project area containers were found to be covered in 20-75% of all households, in the Nkhata Bay project area in 45-100% of all households.

The most common method to draw water from this container for drinking, is by using the drinking cup itself (90%). The more hygienic '2-cup system', by which a separate cup is used to take the water and fill the drinking cup, is only practiced in 1 out of every 10 families. A system of pouring the water was not found in any household.

Boiling of drinking water is not practiced in any of the survey villages (based upon observations of the enumerators).

#### Domestic hygiene

The enumerators made observations on handwashing practices in all survey villages. They found that handwashing before having a meal is a common practice in almost all survey villages. However, people do not seem to be used to wash their hands after defecating, before preparing food and before eating 'snacks' like groundnuts or green maize. This was reported for children as well as for adults.

It is a common practice that all wash their hands in the same bowl of water. The method of washing hands with running water, poured from a cup, was not observed by the enumerators.

Dish racks are more common in the Nkhata Bay project area (75%) than in the Ntchisi project area (25%). Rubbish pits are not very common in both areas: they are found in 25% and 15% of the households respectively.

#### Women's knowledge on ORS

Most of the women have heard about ORS (85%), about half of them had used it (60%) and only 1 in every 4 women knew correctly how to prepare it (25%). Most women who had used ORS, had done so in a clinic, where the liquid was given to them by health personnel. This explains why they had used it, without knowing how to prepare it.

#### Use of medical facilities

About half of the households have had one or more contacts with a clinic during the 3 months preceding the survey (May-July 1993). There was a large difference





between villages. In TA Nthondo (Ntchisi) people had relatively few contacts with a clinic: 80% of the households made no single visit to a clinic, compared to 45-50% in the other three TAs.

Women visited the clinic about 3 times more often than men. Calculated per 10 households, women made on average 9 visits (range 3-13), while men made 3 visits (range 1-6), during the period indicated above. Women's visits include visits made for their children.

An overall percentage of 65% of the under-5 children was found to be fully vaccinated for their age. This varied from 35-90% between different villages. In TA Nthondo (Ntchisi) the average immunization coverage was lower than in the other three TAs.



## 4 CONCLUSIONS FOR PROJECT IMPLEMENTATION

### 4.1 WATER

The technology for the provision of safe water supplies in this project is the construction/protection of shallow wells equipped with a NIRA handpump and the protection of springs.

- . *Community site selection to safeguard:*
  - . *incorporation of protected sites in existing water supply infrastructure*
  - . *full participation of women in site selection*
- . *Number of protected water sources needed per village*

It is important to realize that the newly protected source has to fit into the existing water supply infrastructure. As the existing infrastructure is generally composed of an considerable number of unprotected water sources, the choice of sites for new sources and/or protection of existing sources is very crucial for the social acceptability, and therefore the future usage, of the new facilities. Women should be regarded as the key persons to ensure a proper selection of sites. An approach through 'community site selection' sessions, in which both men and women indicate their priorities and reach mutual agreement on the sites to be protected, should safeguard women's participation at this point.

In both project areas the people live scattered. In the Nkhata Bay area the villages are about three times as large as in the Ntchisi area: mean populations are 285 and 820 households per village respectively. This means for planning purposes that there is an overall need for:

- at least 2 protected water sources per village in TA Timbiri (Nkhata Bay)
- 1 protected water source per village in TA Chikho and TA Nthondo (Ntchisi)
- 1-2 protected water sources per village in TA Chiloko (Ntchisi)

- . *Technical surveys*
- . *Appropriate and acceptable technologies*
- . *Participation of community in construction work*

Although most villages have a large variety of water sources, there is still a water scarcity problem to be faced by 55% of the women in the dry season. Many wells and several springs are not perennial. Although wells are cleaned during the dry season, with traditional skills and tools they can not be sufficiently deepened to provide enough water.

This stresses the need for a proper technical survey of the sites that are proposed by the villagers for protection. Hand augers for test drilling should provide information on soil composition, the depth of the hard rock and the height of the water table. Based upon this information the technical feasibility can be evaluated.



The protected wells will be deeper than the traditional wells, through the use of other technologies and tools: lining will provide protection against unstable soils, picks will enable the digging in hard layers of soil, and dewatering pumps will enable the digging under the current water table. These techniques should ensure that the wells are not only protected against contamination, but that they will also provide more water.

Most springs can be expected in TA Timbiri (Nkhata Bay) and TA Chikho (Ntchisi). As all springs found in the survey villages were unprotected, spring protection seems to be a rather unknown technology. Attention should therefore be given to a proper explanation of this technology.

The protected springs will have a 2 cubic meter storage tank with two taps. This ensures that the spring is not only protected against contamination, but also that more water will be available.

As cleaning of wells is a common activity in the dry season, it seems reasonable to request villagers to contribute in labor for the protection of their water sources.

- . *Community based management (CBM) and acceptance of community ownership*
- . *Availability of spare parts and village level financing systems*
- . *Technical training of caretakers and monitoring*

It was observed that several handpumps identified in the survey villages were not or only badly functioning. People were waiting for 'the government' or 'the implementing project' to come and repair the pumps. Maintenance committees and caretakers (if existing) usually had no access to spare parts.

Malawi is in a transitional phase from a centralized pump maintenance system, to a community based management (CBM) system. In both project areas the introduction of this new system only started recently. It should be expected that most villages are still unaware of it. Acceptance of this new maintenance system is crucial for the long term success. This includes the willingness and ability to accept community ownership, to accept financial responsibility and to rely on own skills for maintenance and repairs.

The availability of spare parts, at affordable prices, is also crucial for long term success.

The project will work on the provision of spare parts through the national sparepart distribution system which is under development at the moment. This refers to spare parts for NIRA pumps as well as for springs.

Income levels are low: a median household income of MK 375 a year (about US\$ 35), with 25% of the households earning less than MK 150 a year.

\* Compared to these levels of income, the NIRA spare parts are relatively expensive: US\$ 8.50 - 25.00. However, the wearing parts of a NIRA pump are relatively long lasting; average repair costs are expected to be less than US\$ 25 per year, being US\$ 0.50 per household per year, assuming that a user group is comprised of 50 households. Experience from other projects learns that this is within the village capacity. (US\$ 0.50 = MK 2.25, rate August 1993).



\* Repair costs for protected springs are expected to be lower than for the pumps. Options for maintenance funds and savings should be an important point for discussion during the VLOM training.

It was also found that most villages have only few bicycles and ox carts. This means that maintenance of pumps should be regarded as a new phenomenon: few people will be used to bolts, nuts and the use of the tools. This requires sufficient attention for technical training of caretakers, and a period of monitoring on technical skills, apart from monitoring on the organizational aspects of VLOM.

#### 4.2 SANITATION

The project technology for improvement of pit latrines is the installation of a 'sanplat': a cemented platform of 60\*60 cm, with a tight fitting lid, elevated foot rests and a smooth inclining surface. This is in line with the Malawi sanitation policy. Material costs involved are about MK 14 per sanplat, on cement and reinforcement bars.

- . *Increasing latrine coverage*
- . *Promotion of sanplat-latrines:*
  - . *advantages of latrines as experienced by women*
  - . *women's experiences with sanplats*
  - . *introducing sanplats as a new technology*

Many new latrines were constructed since 1992, increasing the latrine coverage to 50%. A latrine promotion program should be designed to reach the other 50% of the population and focus on their obstacles in having a latrine constructed. The main obstacle for latrine construction, as indicated by the women, is a lack of interest and priority as given to the issue by men. This requires attention during hygiene promotion sessions.

In the villages covered under the other sanitation project in TA Chilooko (Ntchisi) the latrine coverage had increased to 80%, while 45% of those latrines had a sanplat installed. This indicates for the other TAs, that an increase in the latrine coverage can realistically be expected as one of the project outputs, and that the sanplat technology will be generally accepted.

Women indicated that the use of a latrine has three main advantages: health, privacy and comfort. In further promotion of latrine construction, attention should not be concentrated on 'health' as a single advantage: equal attention should be given to 'privacy' and 'comfort'.

The additional advantages of the installation of a sanplat, as indicated by the women who have a sanplat-latrine, are the following: a sanplat is easy to clean, it is strong and long lasting and there are no flies. These experiences should be shared with other women, when promoting the installation of sanplats.





Sanplat activities should not start with construction, but with introducing sanplats as a new technology. The fact that most women never saw a sanplat before also asks for the development of special extension materials.

- . *Latrine construction and sanplat requirements*
- . *Selection of sanplat casters*

Existing latrines are all built with one compartment. This means that one sanplat per household should be made available. Villages in the Ntchisi project area will need about 50 sanplats (TA Chikho and TA Nthondo), villages in the Nkhata Bay project area will need about 150 sanplats.

Most latrines will not need any lining. Only in some areas with sandy soils, specially in Nkhata Bay, lining might be necessary. In this case special training by the project staff might be needed.

It should be realized by the project that 'latrine construction' is more than only 'digging a pit and installing a sanplat'. For the users, the quality of the shelter is of high importance to guarantee its comfort and thus facilitate its proper usage. This also applies for the quality of the sanplats: proper training and monitoring of the casting process should guarantee high quality products.

The selection of sanplat casters should be done by the villages. People with special skills might be expected from two groups:

- Women might have special skills through the production of clay pots and their traditional task in smearing the floor of the houses.
- In some areas builders are engaged in latrine construction. They might be specially interested in the new skill of sanplat casting.

In Nkhata Bay more sanplats should be casted per village than in Ntchisi. This requires a higher number of casters to be trained and equipped.

#### 4.3 HYGIENE PROMOTION

The hygiene promotion program will be composed of two parts: an 'hygiene promotion for sanitation' program and an 'hygiene promotion for water' program.

- . *Messages for the hygiene promotion program*

The 'hygiene promotion for sanitation' program should specially be focussed on \* the promotion of sanplat-latrines:

- sanplats should be introduced as a new technology
  - promotion should not only focus on 'health' advantages, but should stress 'privacy' and 'comfort' as equally important
  - 'obstacles' in latrine construction should be discussed (both women's and mens' views), including latrine construction in female headed households
- \* proper siting of latrines



- \* handwashing:
  - the importance of handwashing after using the latrine
  - the provision of water near the latrine
- \* latrine use:
  - use of latrines by all family members
  - use of latrines for disposal of babies faeces

The 'hygiene promotion for water' programme should specially be focussed on:

- \* domestic water handling, including
  - water storage in covered containers
  - promotion of the 2-cup system to take water from the container
- \* handwashing with running water, instead of everyone washing hands in the same bowl of water
- \* regular boiling of drinking water will NOT be promoted, as this is not a common practice and as fuelwood is scarce, specially in Ntchisi.

In addition, the hygiene promotion for water programme should focus on hygiene practices at the water sources:

- \* maintenance of soak away pit and spillway
- \* maintenance of catchment trench (springs)
- \* keeping the surroundings clean and free from sources of contamination

On the long term, attention could be given to topics which are more indirectly related to health improvements through water and sanitation:

- \* construction of dish racks and rubbish pits
- \* preparation of ORS solutions at household level
- \* importance of immunization of children

#### *. methods and materials*

As this project has a village-based approach, hygiene promotion sessions should mainly focus on village level target groups.

Women are an important target group. Special attention should be given to their participation, taking into account their role and position in the community. A strategy should be developed on reaching women as a target group, on stimulating them to participate in discussions and on getting their point of view in adapting project messages and inputs to meet village needs.

Where clinics are available, those are specially frequented by women. The survey indicates that about 40% of the women could be reached with hygiene messages delivered at clinics. Although differences between villages are large and poorer groups might not be reached, it could be an effective strategy for sustainability, if collaboration with district medical staff could be elaborated. This is a long term perspective, as it is not in the direct line of the village based project approach.

Extension materials to be developed, should be appropriate for use in villages and should be transportable on a bicycle. They should take into account the high level of illiteracy.



#### 4.4 SUSTAINABILITY AND COMMUNITY PARTICIPATION

##### *. Collaboration with the government*

Collaboration with the Government is important for the sustainability of the project. This relates to the government structures at the national level, as well as at the district and the village level.

The District Community Development Offices in both project areas were involved in the preparations of this survey. This collaboration should be extended to the District Health- and Water Departments. At the village level, working relationships should be established with the respective extension workers. The roles of those extension workers in the project should be specified.

##### *. Community Participation*

Community participation is another important issue for the sustainability of the project. This should be elaborated as participation of both men and women. This asks for special attention to safeguard women's participation.

It should at the same time be elaborated as participation during all stages of the project: from decision making to organization and village level management, both during and after project implementation. This approach should be broader than the commonly used concept of 'self-help', which mainly aims at providing labour.

This will be a rather 'new' approach. Training of field staff and extension workers at this point will be needed. It can be expected that it will take some time to get this approach accepted and successfully implemented. However, in the long run it will highly contribute to the sustainability of the project.

##### *. Integration of water, sanitation and hygiene promotion . Integration of hardware and software*

The project will combine water, sanitation and hygiene promotion. This should enhance the health benefits from the facilities constructed. It can even be stated that little health improvement should be expected unless water and sanitation activities are supported by hygiene promotion.

At the same time, the project will focus on both hardware and software. This is another way to safeguard sustainability: not only the construction of water sources, but also the implementation of community based management; not only the casting of sanplats, but also the promotion of latrine construction and the monitoring of sanplat installation.

On the water side of the programme the sustainability issue should get special attention through:

- community site selection
- technical surveys and reliable construction work



- proper introduction, and acceptance, of the CBM concept
- skills transfer to caretakers
- availability of spare parts

On the sanitation side of the programme the sustainability issue should get special attention through:

- increased latrine coverage with high percentage of sanplats installed
- skills transfer to sanplat casters
- creation of facilities for continued access to moulds and tools after the end of the project

On the hygiene promotion side of the programme the sustainability issue should get special attention through:

- field testing of methods and extension materials
- participatory approach
  - . to reach high level of participation
  - . to safeguard that the practices promoted are appropriate and applicable

#### 4.5 MONITORING INDICATORS

From the survey some measurable indicators for the success of the project implementation can be identified:

##### Water

- \* source of drinking water
  - % hh drinking from a protected source
  - % hh drinking from a protected source at the end of the dry season
  - % women walking more than 500m to source of drinking water
  - % women walking more than 500m to source at the end of the dry season
  - # operational pumps and protected springs per 250 inhabitants

The project intends to increase the coverage of perennial protected water sources; this refers to the TA level coverage, as well as to the village level usage of the facilities. At the same time, walking distances should not increase.

In addition, not directly resulting from this survey:

- \* successful CBM introduction:
  - % operational pumps and taps
  - mean down time of pumps and taps
  - % caretakers implementing preventive maintenance
  - % user groups having a maintenance fund or spares in stock
  - mean distance to the place where fast wearing spares can be purchased





## Sanitation

- \* coverage of sanplat-latrines
  - latrine coverage
  - % latrines with a sanplat

The project intends to reach a coverage of sanplat-latrines of at least 70%.

## Hygiene practices

- \* handwashing practices
  - % latrines with water for handwashing available near the latrine
- \* domestic water handling
  - % storage containers for drinking water which are covered
  - % hh implementing the 2-cup system to take water from the container

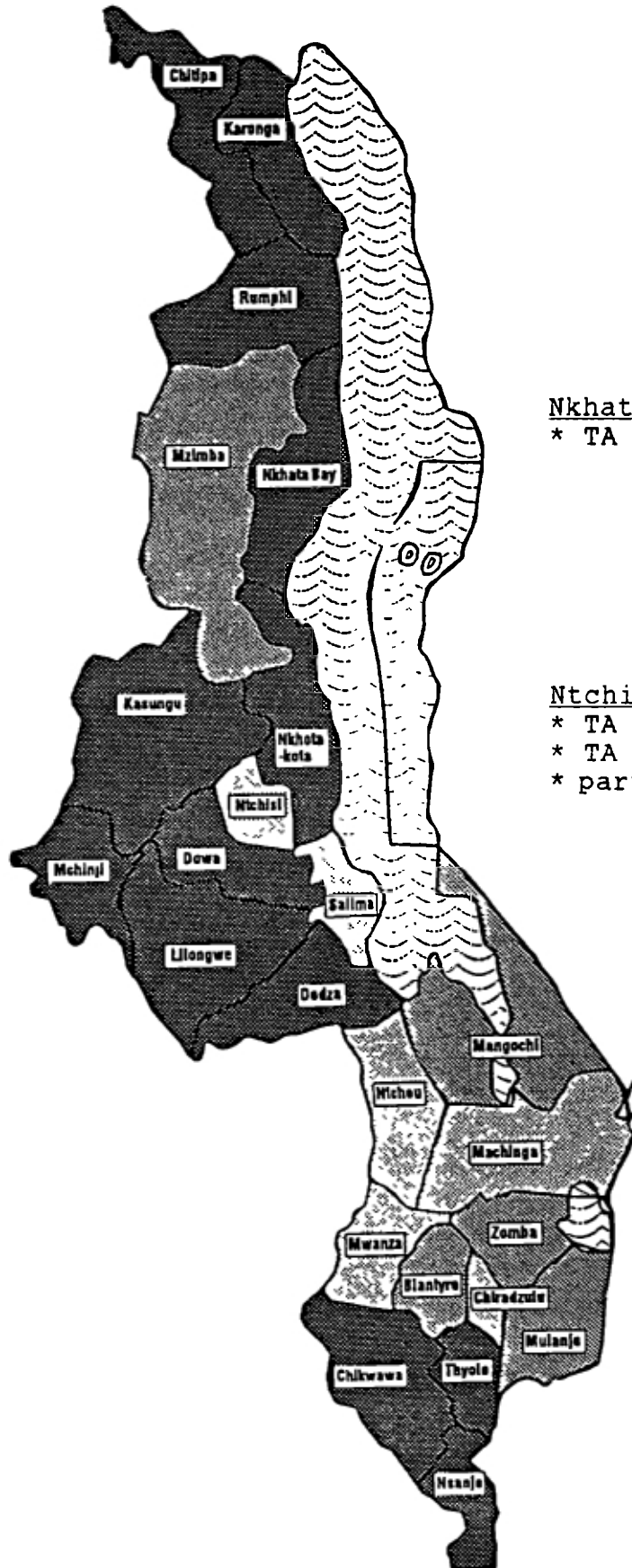
In addition, not directly resulting from the survey:

- \* hygiene at water sources
  - % properly maintained soak away pits
  - % water sources with stagnant water due to spoiling
  - % water sources with clean surroundings



ANNEX 1 - LOCATION OF PROJECT AREAS

**MALAWI**



Nkhata Bay district:  
\* TA Timbiri

Ntchisi district:  
\* TA Chikho  
\* TA Nthondo  
\* part of TA Chilooko



## ANNEX 2 - RESULTS IN DATA

### ANNEX 2A - GENERAL

#### Location of project areas

- \* Ntchisi district: - Ta Chikho, TA Nthondo and 3 wards in TA Chilooko
- \* Nkhata Bay district: - TA Timbiri

Table 1: Population and sample size

	PROJECT AREA IN NTCHISI DISTRICT	PROJECT AREA IN NKHATA BAY DISTRICT	TOTAL PROJECT AREA
# Survey villages	12	8	20
# Household interviews	262	224	486
Population:			
* mean # households per village	58	152	96
* mean # inhabitants per village	285	820	490

**Note:**

- \* The survey covered 10% of all target villages, with 20-35% of all women in these survey villages involved in the household interviews.
- \* The mean # households per village in the Ntchisi survey sample varies per TA: 46 in TA Chikho; 57 in TA Nthondo; 71 in TA Chilooko

Table 2: Demographic and income data

	PROJECT AREA IN NTCHISI DISTRICT	PROJECT AREA IN NKHATA BAY DISTRICT	TOTAL PROJECT AREA
Housing pattern	scattered	scattered	scattered
Female headed households	10%	10%	10%
Yearly household income:			
* median income	MK 375	MK 375	MK 375
* % households less than MK 150	30%	15%	25%
* highest household income in survey sample, per village:			
- range	MK 675-15,000	MK 825-36,800	
- median for all survey villages			MK 3,400
Properties:			
* operational radio	30%	35%	30%
* bicycle	10%	10%	10%
* ox cart	5%	-	5%
* cemented floor	1%	5%	5%

**Note:**

- \* The median income indicates the income level whereby half of the households had a lower, and the other half a higher income



ANNEX 2B - WATER

Table 3: Domestic water use

	PROJECT AREA IN NTCHISI DISTRICT	PROJECT AREA IN NRHATA BAY DISTRICT	TOTAL PROJECT AREA
Main source of drinking water	open well stream	open well stream	open well stream
Households using water from protected sources	5%	10%	5%
Distance walked by women to source of drinking water:			
* less than 100 m	15%	5%	10%
* 100 - 500 m	70%	75%	70%
* more than 500 m	15%	20%	20%
Daily water use:			
* volume used at home (in liters per person per day)	14.0	15.7	14.8
* additional water used in streams	yes	yes	yes
* total volume of water used per village (in liters per day)	4,100	11,900	7,200

Note:

- \* Streams as source of water: For 30% of all households a stream is the common source of water.
- \* Protected water sources: All protected sources found are handpumps, on wells or boreholes. Half of the women which draw water from a pump, use 1-2 additional unprotected sources at the same time.
- \* Distance: living at a distance of more than 500 m from a water source, means spending more than 1 hour daily on water collection (20% of all women)
- \* Weight: the total weight of the water carried home by the women is 70-80 kgs daily for each household

Table 4: Water scarcity: scope of the problem and village level solutions

	PROJECT AREA IN NTCHISI DISTRICT	PROJECT AREA IN NRHATA BAY DISTRICT	TOTAL PROJECT AREA
Women facing water scarcity problems in the dry season	55%	60%	55%
Action by WOMEN in case of water scarcity:			
* use other sources	50%	65%	60%
* wait longer, queue up at source	30%	10%	20%
* clean well or dig new well	15%	10%	10%
* use less water	10%	5%	5%
Action by MEN in case of water scarcity:			
* clean well or dig new well	25%	20%	20%
* use other sources	5%	5%	5%
* ask help of government	<1%	-	-
* no special action	70%	70%	70%

Note:

- \* In case of water scarcity, most women are forced to go to other sources, with a lower preference due to the quality of the water and/or the distance.





Table 5: Existing water sources

	PROJECT AREA IN NTCHISI DISTRICT	PROJECT AREA IN NKHATA BAY DISTRICT	TOTAL PROJECT AREA
Protected water sources: * # pumps per 250 inhabitants in survey sample	0.2	0.2	0.2
Unprotected water sources (mean # per village):			
* communal wells	2 (0-5)	2 (0-4)	2 (0-5)
* family wells	3 (0-6)	7 (0-28)	5 (0-17)
* springs	1 (0-4)	2 (1-4)	2 (0-4)
* streams	1 (1-2)	4 (1-9)	2 (1-5)
* total	7 (4-14)	15 (5-37)	11 (4-23)
Characteristics of water sources in survey villages:			
* depth of wells	less than 5 m	less than 5 m	less than 5 m
* lining of wells	5%	none	none
* protection of springs	none	none	none

**Note:**

- \* Handpumps: A total of 9 pumps was found: 4 were installed very recently and were operational; on the other 5 pumps, 4 were found to be poorly operational, completely broken down or not perennial (80%) and 1 was functioning well (20%).
- \* Springs: About half of the springs were said to be perennial. Most of the springs were found in TA Timbiri (Nkhata Bay) and TA Chikho (Ntchisi). In TA Chikho even more springs than wells were found in the survey sample.
- \* Streams: All villages except one have access to at least one stream. Most streams were said to be perennial.



ANNEX 2C - SANITATION

Table 6: Latrine coverage

	PROJECT AREA IN NTCHISI DISTRICT	PROJECT AREA IN NKHATA BAY DISTRICT	TOTAL PROJECT AREA
* Latrine coverage	50%	50%	50%
* % latrines with a sanplat	none *)	none	none
Year of construction:			
- before 1985	20%	10%	15%
- 1985-1989	10%	20%	15%
- 1990-1991	20%	20%	20%
- 1992- July 1993	50%	50%	50%

Note:

- \* Latrines with a sanplat were only found in TA Chilooko (Ntchisi) in the area covered by the Local Government sanitation project. No sanplat latrines were found in any of the other survey villages.
- In the 2 survey villages covered by this other sanitation project, latrine coverage had increased to 80%, while 45% had a sanplat installed.
- \* The 'yearly construction rate' of latrines is calculated to be as follows.

	Yearly construction rate per 500 households	Latrine coverage
- before 1985	---	7%
- 1985-1989	8/year	--
- 1990	20/year	17%
- 1991	30/year	23%
- 1992	84/year	40%
- 1993 (expected)	78/year	55%

Table 7: Women's attitude to latrines

Type of latrine	PROJECT AREA IN NTCHISI DISTRICT		PROJECT AREA IN NKHATA BAY DISTRICT	TOTAL PROJECT AREA
	not improved	sanplat latrine	not improved	not improved
Advantage of a latrine				
* health	35%	60%	70%	50%
* privacy	40%	35%	25%	30%
* comfort	30%	25%	15%	25%
Reasons for NOT having a latrine:				
* lack of awareness/no exposure	20%		1%	10%
* no priority of men for latrine construction	70%		60%	65%
* soil problems	1%		15%	5%
* other reasons	10%		15%	15%
* latrine under construction	5%		10%	10%

Note:

- \* 'Comfort' refers to. distance, shelter and cleanliness For sanplat latrines an additional comfort was mentioned: safety.
- \* When giving the advantages of a sanplat latrine, the women stressed 'health'. When asked to indicated the special advantages of a sanplat, they mentioned: easy cleaning, strong, long lasting and no flies



Table 8: Characteristics of existing latrines

	PROJECT AREA IN NTCHISI DISTRICT	PROJECT AREA IN NRKATA BAY DISTRICT	TOTAL PROJECT AREA
Description:			
* 1 compartment	100%	100%	100%
* roof	95%	90%	90%
* pit lining	1%	1%	1%
Construction materials:			
* roof: grass	95%	100%	95%
* walls: mud	80%	35%	60%
bricks	5%	55%	25%
* floor: smeared mud	80%	80%	80%
Builder involved in construction	15%	5%	10%
Improvements, as preferred by the women: (re latrines without sanplats)			
* quality of shelter	30%	20%	25%
* installation sanplat	25%	20%	20%
* other	5%	5%	5%
* none	50%	60%	55%

Note:

\* Improvements: 20-25% of the women wanted a sanplat to be installed. This is the initial sanplat demand, without any sanplat promotion activities by the project.

Table 9: Latrines and hygiene (enumerator's observations)

	PROJECT AREA IN NTCHISI DISTRICT		PROJECT AREA IN NRKATA BAY DISTRICT	TOTAL PROJECT AREA
Type of latrine	not improved	sanplat latrine	not improved	not improved
Availability of water for handwashing near the latrine	nowhere	nowhere	nowhere	nowhere
Impression on cleanliness of the latrine:				
- clean	15%	70%	20%	15%
- reasonable	60%	15%	40%	50%
- dirty	25%	15%	40%	30%
Observations regarding construction and use of the latrines:	<ul style="list-style-type: none"> <li>- poor ventilation was observed in several latrines, resulting in bad smell</li> <li>- bad siting of latrines was observed, even close to kitchens</li> <li>- flies were observed, specially where latrines were built close to houses</li> <li>- napkins were observed to be washed in streams, which were also used for domestic purposes</li> </ul>			



ANNEX 2D - HEALTH AND HYGIENE

Table 10: Domestic water handling

	PROJECT AREA IN NTCHISI DISTRICT	PROJECT AREA IN NKHATA BAY DISTRICT	TOTAL PROJECT AREA
Storage of drinking water: * container covered	45%	90%	65%
Method to draw drinking water from the container:			
- pouring	-	-	-
- 2-cup system	15%	5%	10%
- directly with drinking cup	85%	95%	90%
Women observed to boil their drinking water	none	none	none

Note:

\* Practices on boiling of drinking water: data according to observations of the enumerators.

Table 11: Domestic hygiene

	PROJECT AREA IN NTCHISI DISTRICT	PROJECT AREA IN NKHATA BAY DISTRICT	TOTAL PROJECT AREA
Facilities at household level:			
* dish rack	25%	75%	50%
* rubbish pit	15%	25%	20%
Handwashing practices	<ul style="list-style-type: none"> <li>- handwashing before eating a meal is a common practice in almost all survey villages</li> <li>- normally all wash their hands in the same bowl of water</li> <li>- normally people do NOT wash their hands:                             <ul style="list-style-type: none"> <li>- after defecating</li> <li>- before preparing food</li> <li>- before eating 'snacks' like bananas or groundnuts; this was reported for children as well as for adults</li> </ul> </li> </ul>		

Note:

\* Handwashing practices: data according to observations of the enumerators.





Table 12: Women's knowledge on ORS

	PROJECT AREA IN NTCHISI DISTRICT	PROJECT AREA IN NRHATA BAY DISTRICT	TOTAL PROJECT AREA
Women's level of knowledge on ORS:			
- 'hearing'	85%	80%	85%
- 'using'	65%	60%	60%
- 'preparing'	20%	30%	25%

Note:

- \* 'hearing' refers to the women who had heard about ORS or sugar-salt-solution
  - 'using' refers to the women who had ever used it
  - 'preparing' refers to the women who knew correctly how to prepare it
- Most women who had used ORS had done so in a clinic, where it was given by medical personnel. This explains why they had used it, without knowing how to prepare it

Table 13: Use of medical facilities

	PROJECT AREA IN NTCHISI DISTRICT	PROJECT AREA IN NRHATA BAY DISTRICT	TOTAL PROJECT AREA
Immunization: * Under-5 children completely vaccinated for their age	60%	75%	65%
Visits to a clinic in the 3 months preceding the survey: * % households making 1 or more visits	40%	50%	45%
* visits by women (# visits per 10 households)	7 (2-13)	11 (5-15)	9 (3-13)
* visits by men (# visits per 10 households)	3 (1-5)	3 (1-7)	3 (1-6)

Note:

- \* In TA Nthondo (Ntchisi) both the immunization rate and the frequency of visits to a clinic were relatively low when compared to the other areas.



## ANNEX 3 - QUESTIONNAIRES

### ANNEX 3A - List of questionnaires:

#### \* General information on the village - in English, Chichewa and Tumbuka

This form was used during the key informants meeting, at the beginning of the enumerators' activities in a village. It is a guideline to structure the meeting. It contains questions on the water, sanitation and health&hygiene situation at village level, as well as some general questions.

#### \* Household interview - in English, Chichewa and Tumbuka

The questionnaire consists of 4 components: general information, water, latrines and health&hygiene. The questions were asked to the women, while men were not supposed to be present.

A copy of the English version is included in annex 3b. Questions that were less informative for this report, are not included.

- \* Information on the water sources:
- \* Springs
  - \* Wells without a pump
  - \* Wells/boreholes with a pump
  - \* Streams

These forms were used when visiting the different water sources. They contain questions on the use and the user group of the source, as well as questions to describe the source (technical aspects) and its surroundings. In case of a pump, also questions on operation and maintenance are included.

#### \* Water and sanitation observations

This form was used for the enumerators' observations during their stay in the village; a copy is included in annex 3c. Questions that were less informative for this report, are not included.

The enumerators were provided with a paper containing some background information, to facilitate and structure their observations. This paper came from: 'Making the links - Guidelines for Hygiene Education in Community Water Supply and Sanitation', Marieke Boot, IRC Occasional Paper Series Nr 5, The Netherlands, 1990, pp 25-46.







WATER SITUATION

5. What water source do you use these days for the following:

	surface water	unprotected shallow well	unprotected spring	protected spring or handpump
drinking:	<>	<>	<>	<>
cooking:	<>	<>	<>	<>
bathing:	<>	<>	<>	<>
washing children:	<>	<>	<>	<>
washing clothes:	<>	<>	<>	<>

-> Number of water sources used for domestic purposes: .....

6. What is the distance to the source of drinking water?

- (to be estimated by enumerators):
- <> less than 100 meters
  - <> 100 - 500 meters
  - <> more than 500 meters

7. What containers (buckets, flasks etc) are there in this household for drawing water and what is the volume of each?

(volume to be estimated by enumerators):

container: .....  
volume: .....

8. How many containers of water did you draw yesterday?

indicate total number

of each container: .....

-> Calculate at the office: total volume of water is .....

(Note: this is a question on water use by the entire household; include all water drawn by ALL women, as well as ALL children)

9. Did it ever happen that water was scarce or finished in the source(s) you use? <> no

<> yes -> when: .....

If YES: What did you do to handle or solve this problem?

Women:

- <> no special action
- <> skip activities: .....
- <> use less water for: .....
- <> use other/additional sources (explain type and activities): .....
- .....
- <> other action: .....







.



15. What do you see as the advantages of this latrine? .....  
.....  
.....

16. What would you want to make different if you where to built it again?  
Or what do you want to change on this latrine if you had the opportunity?  
and WHY? .....  
.....  
.....

First 5 latrines in this village -> go and look and continue with question 17  
For the next latrines you meet in this village -> continue now with question 20

17. Type of latrine (go and look); describe:  
a. number of compartments: .....  
b. has it got a roof: <> no <> yes  
c. describe construction materials of:  
roof: .....  
walls: .....  
floor: .....  
d. is the pit lined: <> no <> yes  
e. is there any water near the latrine for handwashing after  
using the latrine: <> no <> yes  
f. general impression on cleanliness (by enumerators):  
<> clean <> reasonable <> dirty

18. Was a builder involved in the construction of the latrine:  
<> no <> yes

IN CASE THERE IS NO PIT LATRINE:

19. Did you ever think of building a pit latrine?  
<> no  
<> yes -> what stopped you from building it?  
<> lack of money  
<> lack of construction materials  
<> lack of labour  
<> don't know why  
<> other reason: .....  
.....  
.....

---







b. What questions or suggestions do you have to this project?

.....  
.....  
.....

c. What other problems or issues should be addressed or included into this project to make it more useful for your village and for your family?

.....  
.....  
.....

Explain about the meeting that will be held at the end of this survey. Ask the people of this family, both men and women, to come and to come forward with any suggestion or remark that they might think of. Explain that also other families which were not visited with questionnaires, are invited to come and join the meeting and give their suggestions and remarks.

THANK YOU FOR YOUR COOPERATION.

---

Additional notes by the enumerators:





---

District: ..... CODE: .....  
TA: .....  
Village: .....  
Enumerators: ..... Date: .....

---

## WATER AND SANITATION OBSERVATIONS

During your stay in the village, did you actually SEE people:

1. boil drinking water?

number of observations: .....

observations:     <> no one  
                  <> some women  
                  <> many women

2. washing hands before going to eat?

number of observations: .....

observations:     <> no one  
                  <> some women  
                  <> many women

Please turn over



Other observations that can be helpful for the design of the project - consult also your paper on Water&Sanitation observations. Mention both GOOD PRACTICES and PRACTICES THAT COULD BE DISCUSSED OR IMPROVED.

Observations on water

Observations on excreta disposal

Observations on personal and domestic hygiene

