

**AN INVESTIGATION INTO THE FACTORS LIMITING EFFECTIVE WATER  
SUPPLY IN RURAL AREAS OF ZIMBABWE: A CASE OF ZHOMBA IN  
GOKWE NORTH DISTRICT**

**Edmore S. Maguvu**

*Ministry of Agricultural Engineering and Mechanisation*

**Sherman Mutengu**

*Chinhoyi University of Technology*

**Abstract**

Poor water supply and sanitation services continue to be critical problems in most developing countries despite considerable efforts to improve and expand access by most governments. The research was conducted in Zhomba area of Gokwe North District, a semi-arid area in Midlands Province of Zimbabwe.

The study aimed at contributing towards the improvement of water supply and sanitation services in rural communities of Zimbabwe by identifying policies governing the provision of water and assessing the public health effects associated with its provision in rural areas. Physical field surveys and field observations, interviews, questionnaires and transect walks were done. Focus group discussions were also used to obtain information on the perceptions and beliefs of water -related diseases. Ownership of water supply and sanitation facilities, lack of technical knowledge and ignorance are the major problems in the area. In conclusion communities need to be empowered to initiate, own and manage their water supply and sanitation schemes. It is recommended that stakeholders need to come together and make policies, laws that clearly define the role of institutions and non-governmental organizations in water supply and sanitation.

**Introduction**

The realization that provision of water is indeed one of the most important prerequisites for improving a people's quality of life, led to the launch of the International Drinking Water Supply and Sanitation Decade (IDWSSD) by the General Assembly of the United Nations in November 1980 with the goal: "to provide all people with water of

safe quality and adequate quantity and basic sanitary facilities by 1990". Human life, like all animal and plant life on the planet, is dependent upon water. Not only do we need water to grow our food, generate our power and run our industries, but also we need it as a basic part of our daily lives. Communities and individuals can exist without many things if they have to: they can be deprived of comfort, shelter or food for a period, but they cannot be deprived of water and survive for more than a few weeks. Water, sanitation and health are therefore very critical not only as a human right, but also as a step to national development and poverty reduction. It is estimated that 1.1 billion people lack access to improved water sources world wide, with 84% of these people living in rural areas. In some cases, water is scarce while in other cases, water is plentiful but of poor quality. In most developing countries, emphasis is placed on reducing distances between sources and households and approaches such as gender mainstreaming and beneficiary participation among others but with less emphasis on the quality of the water. Indeed, most rural water supplies fail basic bacterial tests. World Health Organization has set a target of halving the proportion of people without safe access to improved water or sanitation by 2015. Realizing that an estimated US\$23 billion per year would be required to achieve the target, WHO in its world day Report of 2001, advocated for immediate solutions. People in Gokwe North district have access to a mix of protected and unprotected water sources. Poor water supply and sanitation services continue to be critical problems in the district and in the whole country despite considerable efforts to improve and expand access since the implementation of the Integrated Rural water Supply and Sanitation program in 1988. Globally, mounting evidence shows that centrally managed schemes, among others, are difficult to implement and operate when

the communities served are dispersed, remote, and relatively small and lack the financial resources and physical and social infrastructure needed to support development or to maintain new systems. Serious problems stand in the way of efforts to expand and sustain water supply and sanitation systems in rural areas of the world (WHO 1987).

## **Methods and materials**

### *Description of the study area*

The study was conducted in Zhomba area which is located in the North Western part of Gokwe North District in the Midlands province in Zimbabwe. The area falls under Agro- Ecological Region IV, receiving an average annual rainfall of between 450-650 mm and experiencing high temperatures of up to 40°C during the hot season. The area covers approximately 23 000 ha with a population density is between 15-25 people per km<sup>2</sup>. The soils in this area vary from silic, litho sols to sodic (4m/8/2) of which the sodic soils are predominant. The sodic soils are inherently unstable and prone to gulling as well as extensive and severe sheet wash erosion. The soils support the growth of tree species such as *Acacia*, *Combretum* and the dominant species *Colophospermum Mopane*. The grass species include *Eragrostis* and *Brachiaria*. The drainage pattern is dendritic with only two seasonal streams, Siachirongo and Masungu. Cultivation of crops and livestock rearing is the major farming activity in that area. Gokwe North has population of approximately 170 000, which constitutes 11.33 % of the provincial population. The ratio of men to women is 75 % due to economics driven urban migration of males from the district. The census data of 2002 also showed that the economically active population is about 56 000 individuals. This is composed of 40.43 % females and 59.57 % males.

The district currently has one major hospital and fifteen clinics and other village health centers.

### *Data Collection*

Various data collection methods of both qualitative and quantitative nature were used. This included literature survey, Participatory Rural Appraisal (PRA) research tools such as discussions with local communities and various resource persons in the RDC, schools and health centers. In addition, physical field surveys and field observations were undertaken together with interviews, questionnaires and transect walks. Key informants were contacted through electronic mail and telephone calls.

### Desk Study

The researcher gathered baseline information about Gokwe North district through review of relevant materials and documents such as the National Census, RDC previous meetings, health centers' records and district reports. After this, a physical field visit to Zhomba village was made to inform the key stakeholders about the study and agreed on convenient dates and times. A visit was also made to Nembudziya growth point where the major stakeholders in the district are stationed.

### *Focus group discussions*

Focus group discussions were also used to gather information on the perceptions and beliefs of diarrhoeal diseases, causes, and pathways of help seeking and treatment of water -related diseases. Vernacular language that was well understood by everyone in the focus group discussions was used. A detailed household survey was conducted together

with the use of household questionnaires. Among other crucial issues, the questionnaire addressed socio-economic factors as well as demographic factors.

### *Random sampling*

Households in Zhomba village were randomly selected so that information acquired was representative of the village. To ensure that the information obtained was a true representative of the situation in the village, about 60% of the households were interviewed.

## **Results and discussion**

### *Policy and legal framework*

Gokwe North district implemented the Integrated Rural Water supply and Sanitation Program in 1988. The district then had a District Water Supply and Sanitation committee, which was chaired by the District Administrator. The committee also had a representative from the Ministry of Health and Child Welfare, an Environmental Health Technician and DDF field Officer. The IRWSSP was halted in 2000 when the funding for the program ceased. The District Water Supply and Sanitation committee however felt that during the implementation of the program, a number of constraints hindered the progress, thus contributing to the ineffective provision of water supply systems.

Operation and maintenance of most water points in the district is done by DDF, though Community-Based Management (CBM) of water supply and sanitation services has been introduced in some parts of the district such as Chitekete and some parts of Nembudziya. However, the RDC indicated that efforts were being made to mobilize local

funds to ensure the sustainability of facilities. The district has in store about 30 toolkits for CBM.

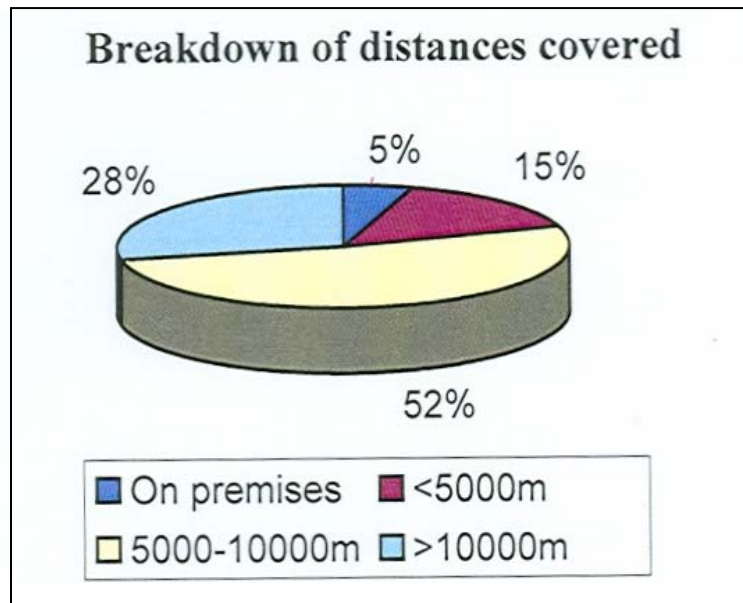
### *Types of water Sources*

In the selected communities, households had a mix of both protected and unprotected water sources. Protected water sources included piped water, boreholes and protected wells. Unprotected sources were rivers, unprotected wells, streams, and small earth dams. The available water sources were badly affected by the 2000 and 2003 Cyclone Eline and Japheth, respectively.

People in the district walk long distances to water points. In Zhomba village there are no sources of protected water at the time the research was done. The existing water sources are deep wells, which during summer months run dry. The effect of the two cyclones that pounded the country cannot be left out as they had a telling effect on the water availability. The heavy rains that fell in the year 2000 destroyed most water sources. Except at Chitekete growth point which has a BH30D mono pump, the rest of the Zhomba people do not have any source of protected water. The majority of the people in the district walk between 5 and 10 kilometres to get to water sources either protected or unprotected. This study also found that it is particularly women and the girl child who bear the greatest burden of fetching this water and carrying out other reproductive as well as productive roles within their communities.

Figure 3.1 illustrates the distance covered by some households to water sources. This shows that a lot of time is spend on traveling to water source eating the valuable time that can be used fort other productive purposes.

**Figure 3.1: Breakdown of Distances covered by people to water points in Gokwe North as at 2004**



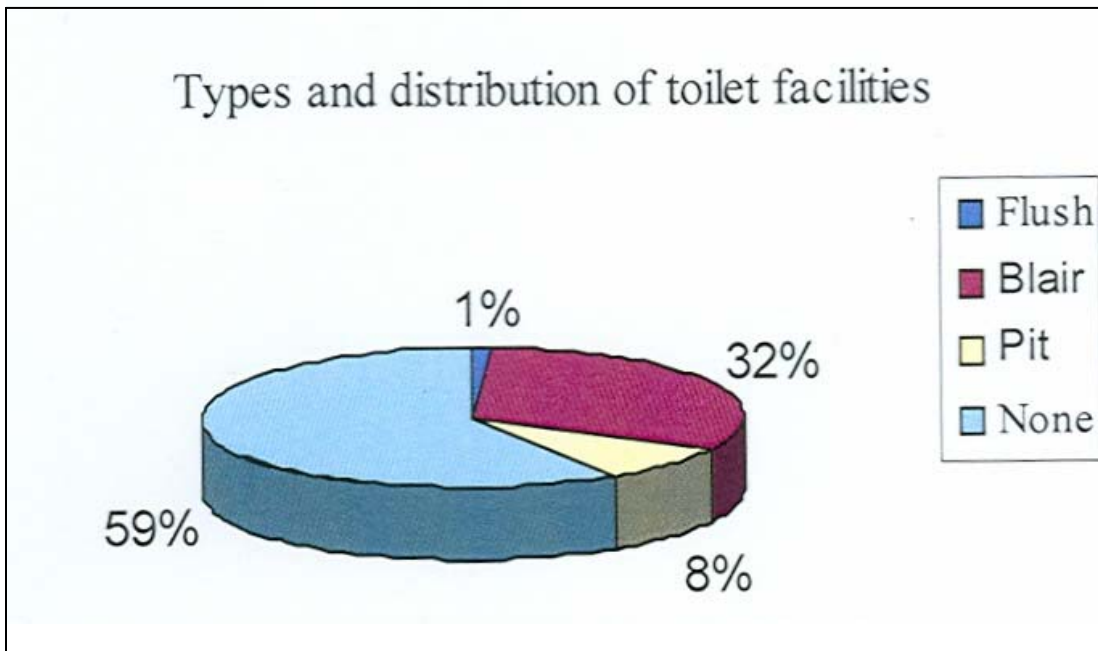
Source: Own fieldwork

### *Sanitation Facilities*

About 85 % of the households had no access to sanitation facilities in 1995. Literature from the RDC has also revealed that about 75 % of the households have no access to any type of sanitation facility. A survey of some selected households revealed that the most common sanitary facility is the Ventilated Improved Pit Latrine and the

Blair toilets. Household proportion with sanitation facilities is shown in Fig 3.2. Some households had their sanitation facilities destroyed by cyclones.

**Figure 3.2: Sanitation Facilities in Gokwe North district.**



Source: Midlands, Water Supply and Sanitation Department, 2004

Sources from the Ministry of Health and Child Welfare attributed some the high diarrhoeal outbreaks to lack of proper and inadequate sanitation facilities.

#### *Water quality-related diseases*

Information obtained from health centers has shown that water related diseases in the district have taken an upward trend since the year 2000. Health personnel felt that, despite the upward trend over the last five years the health and hygiene education being



conducted in some parts of the district had impacted positively on the incidences and prevalence of diseases. However, from the information gathered in Zhomba village, it showed that disparities in information, access to education as well as high illiteracy levels, poverty and human development, in the village seriously impacted on hygiene appreciation and consequently water quality.

Diarrhoeal diseases and schistosomiasis are the major diseases in the district and in Zhomba village. High incidences were in children under the age of five years. Statistics from the local Zhomba clinic showed that the incidence increased in rainy season. Cholera has also been reported in some parts of the district. Malaria is also a major problem in the district with a lot of deaths being recorded.

*Progress made in the water sector in the district*

In 1988, the Norwegian Development Agency assisted the district with funds to provide water and sanitation facilities. Fund management was heavily centralized, and it was the Norwegian Development Agency that instructed the DDF on what to do with the money. A total of 42 boreholes and 22 deep wells were drilled. The target for deep wells was 40 but this was not achieved due to financial limitations. Mvuramanzi Trust also provided for the drilling of boreholes in the area. In its proposals, twenty boreholes were supposed to be drilled. Due to financial constraints only twelve boreholes were drilled.

Despite all these efforts from non-governmental organizations, this did not significantly improve the situation of many villagers, especially those living in remote parts of the district such as Zhomba as most of these facilities were mainly for schools, clinics and business centers.

Due to financial limitations, the year 1991 saw the sinking of 45 deep wells. These were considered a viable option because they were cheaper than boreholes, which needed use of pumps and heavy machinery for drilling. In 1992, 10 other deep wells were sunk in selected communities, much of which were along major road networks. The bulk of the financial resources were spent on community mobilization, training workshops, training well sinkers and headwork builders

A lot of projects were done in 1996. NORAD also had projects on boreholes but it maintained its mission to concentrate these facilities at schools, clinics and business centers. Funds available managed to facilitate the drilling of 17 boreholes and a deep well. Apart from providing funds for water supply structures, NORAD had also earned itself a household name for supplying community people with bags of cement to build latrine toilets.

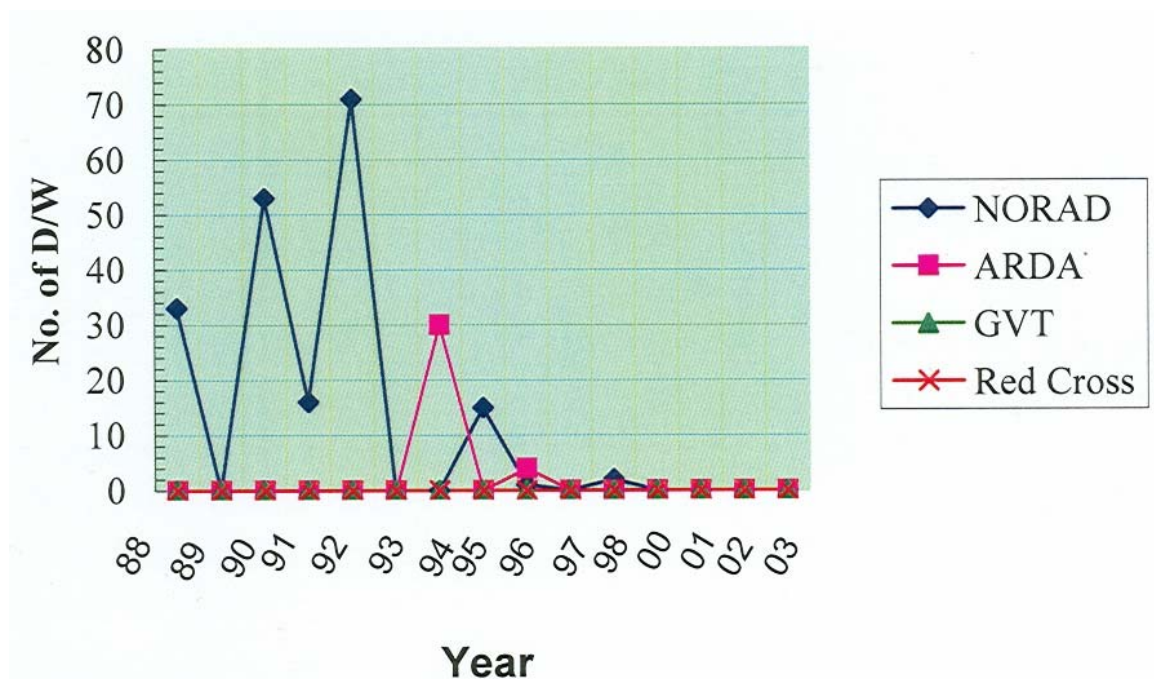
In 1997, there were about 51 boreholes constructed under the NORAD projects. In 1998 and 1999, NORAD facilitated the drilling of 19 boreholes and 2 deep wells. There was also mechanical rehabilitation of existing structures, which saw 19 boreholes being rehabilitated.

The year 2002 -2003 hard hit the district's water sector. Donors withdrew support. The Government of Zimbabwe only managed to drill 7 boreholes and a deep well. NORAD was the major player in borehole drilling in the district. From the period 1990, to 1994, no major achievements were made in borehole drilling. This can be attributed to a number of factors which include the Economic Structural Adjustment Program (ESAP) in 1992 which resulted in economic decline in the country and the withdrawal of donors. The district suffered a major setback during 2000 to 2003. From the discussions with

people in the district, this was probably due to crisis of basic things in the whole country of which fuel and cash were cited. Political instability can also be a contributing factor to the withdrawal of donors although this was an issue, where very few people felt uncomfortable to explain.

Although donors were very instrumental since 1988, most of their projects failed to address the issue of sustainability because they were based on a supply-driven approach. This explains why many boreholes have gone unrepaired for longer periods in some cases, for the past 8 or more years. A statistical assessment of the progress made in the district has shown that donors have done a tremendous job but this dangerously created a donor-dependency syndrome within receiving communities.

**Figure 4.5: Well Sinking since 1988-2003**



Source: Field Work

Although some donors ceased their operations, in 2003, UNICEF assisted the district in many ways. It provided funds for mechanical rehabilitation of water points.

*Community beliefs and perceptions about diarrhoeal illness*

The discussion started with the assessment of most common diseases experienced in all selected communities. In all selected communities, villagers indicated that they experienced diseases like cholera, especially during the rainy season. Cholera outbreaks were also said to be much prevalent during church festivals in the district. In Zhomba, there is a church group that believes in divine intervention in all cases of disease outbreak and does not visit health centers during illness. This shows the urgent need for health and hygiene education to be conducted in all parts of the district. Stomach problems in schools especially primary schools were said to be a serious problems mostly occurring in wet seasons and during harvesting (*nguva ye zhizha*).

Village Health Workers expressed concerns about the frequent occurrence of stomach problems. Breastfeeding mothers indicated that the under fives were very much affected with diarrhoeal diseases, while some mothers viewed this as a daily household problem. They said diarrhoeal outbreaks were common when children under five years start growing teeth. However the Village Health Workers with their basic modern health care training recognized the sunken fontanel as a sign of severe dehydration. The Village Health Workers interviewed constantly stated that they have on several cases, advised mothers to consult their nearest health centers if the child does not get immediate life saving dehydration treatment.

*Community perceptions to existing water supply systems*

Many communities felt that they did not own existing water supply systems. Group discussions with them revealed that the borehole that once supplied water to them had been unrepaired since it broke down. The VHW for the area explained that the villagers were not even aware who was responsible for repairing the borehole between them and the DDF. One respondent clearly said,

"We are not clear as to whether the borehole is in the hands of the community people or DDF". The community highlighted that most boreholes that were drilled in the area end up collapsing due to unstable soil conditions. In response to the researcher's suggestion that beneficiary communities should manage their own water supply systems, one respondent, the headman, clearly said, "*Ndechekiriniki*" (It belongs to the clinic). The community people felt that they do not own the facility and were not interested to take up maintenance measures and to repair because they felt that they did not own the facilities although they were using them. In reality, community people feel entitled to access but are not willing to take maintenance responsibilities, hence the need to take them on board during the start of any developmental project.

Given all this, it can be said that many water projects have also failed in the district because the service providers also failed to acknowledge and appreciate communities' indigenous knowledge.

#### *Pathways in seeking treatment*

In almost all selected households, the mothers and the VHWs highlighted options available for seeking treatment of their children. Mothers indicated that they mainly consulted their mothers in law. If the situation persisted, they indicated that they would then approach traditional healers. However, heated arguments broke with the VHWs,

who persistently argued that health centers were the best for treating diarrhoeal cases. Very few mothers supported the idea of going to the health centers before consulting their own local experts. In most instances, mothers indicated that the health centers were long distances away and charged a fee for their services. For young- newly married mothers, it was quite evident that their mothers in law played a cardinal role in decision making about where treatment should be sought. One villager explained that *manyoka enhova* were caused by witches and they strongly recommended that consulting traditional healers was the best option than going to health centers. Some mothers indicated that they more often use the salt and sugar solution.

Given all these diarrhoeal classes, there is need for a high degree of specificity of expressions. For example, when water, sanitation or hygiene related diarrhoea is measured as a health impact indicator, it is important to exclude diarrhoea due to other causes. It is also quite important to specifically ask the caretaker or the mother for the kind of diarrhoea through describing the way the stool is passed for example, stool with blood or mucus. This will help in reducing underreporting and misclassification of diarrhoea.

#### *Major contributing factors*

This study found that there are a number of factors, which have led to the ineffective provision of water in the district. These factors range from environmental, technological, and socio-economic to cultural reasons.

#### Environmental

Deep wells have proved to be not suitable in the area due to unstable sodic soils which are prone to slumping. A lot of boreholes have been reported to dry up during the

dry season. Physical constraints e.g. poor aquifer with limited storage seems to have a contributory factor in limiting water supplies.

**Figure 4.6: A non functional borehole**



A borehole that served the clinic has lost its function

### Engineering Shortcomings

It was revealed to this researcher by the community that the borehole at the clinic could also not be repaired even if the community had wanted to repair it because they lacked the knowledge on how to repair it. It was noted that the district experienced poor institutional organization for the operation and maintenance of communal facilities.

### Settlement Patterns

The scattered settlement pattern in the area has greatly affected the provision of potable water. The existence of shallow well units has been greatly compromised by the way households are arranged.

### Drought and Cyclones

The district has greatly suffered from the 1991-1992 droughts and also the 2000-2001 droughts. These have also dealt a heavy blow to some of the achievements made in the provision of water facilities. Many deep wells have dried up. Also not to be lost sight of is the 200-2001 Cyclone Eline and the recent 2003 Cyclone Japhet, which literally swept all the deep wells available. Deep wells have been filled up with silt, leaving households with virtually no safe water sources but to use unprotected river sources.

### Skilled personnel

Like many districts in the country, the district has suffered from massive movement of skilled personnel from the country. This has left the troubled communities with very few qualified personnel to work with. Many Environmental health technicians have left the country in search of greener pastures and this has greatly affected the district.

### Ignorance and lack of awareness

A major factor thought to be contributing to the problems of ineffective water provision is ignorance and lack of full awareness by the community. A fence, which surrounded the school, was in dilapidated state and some parts of the fence had been stolen. The community expressed ignorance at this since the borehole is no longer working and is viewed to belong to the clinic. The community also expressed ignorance on the dangers of drinking unprotected water.



On the riverbed, women dig for water.

### Operation and maintenance

While many boreholes have been put in place since independence, more than 50 % of these structures were no longer functioning. In Zhomba no borehole is now functioning leaving the community with no source of protected water. Experience in a



number of rural communities shows that villagers are willing to determine their own destiny but they lacked the 'technological know how'.

### Rapid Population growth

Zhomba is a resettlement area, high productivity and high retains from cotton production experienced in the area, resulted in a massive movement of people into Zhomba. Increased number of people using one borehole was cited as a contributing factor to frequent breakdowns of the borehole in the area.

From the information gathered, it is quite clear that the provision of water and sanitation facilities is now at district level but this has seen a lot of confusion, especially among actors within districts and External Supporting Agencies. The State has vested power in RDCs, new actors - users' associations, NGOs, small firms - have stepped in, while local authorities, which were already involved, have acquired greater independence and sought to extend their activities. In so doing, they have naturally come up against the monopoly position of the public sector water distribution. The question of these new actors' legitimacy needs to be settled. Research studies have shown that there can be several systems in the same place competing for recognition. To avoid a stalemate situation, some degree of consensus between the different actors is needed: real negotiations need to be undertaken to define precisely "who does what".

Many of these factors are not inevitable, but rather reflect fundamental failings in the details of the design, implementation and subsequent management of water systems. 4.1

### **Summary of major findings**

The study found that more than 59 % of the households had no water points and used surface waters from ponds and rivers. Most households walk distances of more than

five kilometres to get water, in some cases, unsafe water. At times some use borehole water but they more often supplemented it by water from unprotected sources due to distances covered to get borehole water. The use of multiple water sources, often shared by animals and human beings creates serious health problems, in particular cholera and diarrhoea. Results of this study highlighted some of the probable constraints to the effective provision of water in the district to be; difficult access to ground waters, problems managing equipment, lack of training for operators, insufficient funding among other factors. It also emerged that mothers in the district have various perceptions and beliefs to the occurrence of diarrhoeal diseases.

## **Conclusions and recommendations**

### *Conclusions*

- 1) The provision of safe water supplies and adequate sanitation remains the only road to the achievement of the Millennium Development Goals. Various strategies have been invented and they have failed to address sustainability issues. In the majority of cases, water supply has been provided without the active participation of the beneficiary communities in planning, technology choice, operation and maintenance. In most projects sustainability has been lacking due to lack of commitment on the part of the beneficiaries to operate, maintain and protect the facilities.
- 2) There is an urgent need to focus on demand responsive approaches, which are mainly meant to address the real community needs. Communities need to be empowered to initiate, own and manage their water supply and sanitation schemes. Although rural communities lack scientific explanations to their

indigenous beliefs and perceptions, there is a greater need to consult them so that they can rank their priorities and have technology, which they are willing to support and sustain.

- 3) Efforts should be made to provide more opportunities and tools to different groups in society so that they can organize themselves. Youth are the initiators of change and therefore have the ability to create fresh, innovative ideas and have the capacity to implement, hence a greater need to involve them in all developmental activities. In a nutshell, communities need to be empowered through capacity building to take full responsibility and accountability of any developmental project in their communities.

#### *Recommendations*

- 1) The provision of water supply, sanitation and all other developmental projects should base on the perspectives of local indigenous and community knowledge, the needs of people and the traditional mechanisms that their cultures have built through generations of social interaction and communal living in order to ensure the sustainability of facilities, while respecting human rights and the rights of nature.
- 2) Policy, legislative and institutional reform: There is need for stakeholders to come together and make policies and laws that clearly define the role of institutions and non-governmental organizations in water supply and sanitation.
- 3) Project implementers should review the effectiveness of their current sanitation programs and design better and more cost-effective programs invest in training technical staff and finding ways of attracting

- 4) New skills into their programs and ensure that entrenched interests are not preventing effective coordination between frontline staff and the technical staff.
- 5) Communities should contribute in part to the provision of services to their villages. This will go a long way in instilling a sense of ownership, fosters a sense of responsibility and authority, thus contributing to the sustainability of services.

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