

WATER AND HIV: WORKING FOR POSITIVE SOLUTIONS

IMPACTS OF THE HIV EPIDEMIC ON ACCESS TO SAFE WATER, SANITATION AND HYGIENE IN THE COPPERBELT OF ZAMBIA



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WORKING FOR POSITIVE SOLUTIONS**

-AUTHORS NOTE-

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All photos in this document were personally taken by Jennifer Organ during the course of her research.

-ABOUT THE ACF INTERNATIONAL NETWORK-

ACF is an international humanitarian network, working in 43 of the world's poorest countries. It comprises of:

- Action Against Hunger-UK (ACF-UK)
- Action contre la Faim-France (ACF-France)
- Acción contre el Hambre - Spain (ACF-Spain)
- Action Against Hunger- USA (ACF-USA)
- Action contre la Faim- Canada (ACF-Canada)

Its vocation is to save lives, especially those of malnourished children, and to work with vulnerable populations to preserve and restore their livelihoods with dignity. International, non-political, non-religious and non-profit making, the ACF International Network helps more than 4.2 million people worldwide.

This report is part of the Hunger Watch series of publications. Hunger Watch is the research and advocacy department of ACF-UK. The Hunger Watch team examines transversal factors such as conflict, market instability, and HIV/AIDS and analyses their linkages to acute hunger.

-ABOUT CINDI-

Children in Distress (CINDI) is a non-governmental, non-partisan and non-denominational community-based organisation established in 1994. CINDI-Kitwe was formed to support orphans and vulnerable children (OVC) in an integrated and holistic manner by working with community structures to identify and address the needs of HIV/AIDS affected and infected children and families.

-FOREWORD-

This report paints a vivid picture of the water and sanitation needs of individuals and households affected by HIV/AIDS in Zambia. These needs are particular in terms of access, quantity of water and design of facilities. About 40 million people are infected by the virus around the world, and this number must be multiplied greatly to count all those affected. However, water and sanitation facilities and services are grossly lacking in both rural and urban areas of Africa and Asia. In sub-Saharan Africa about 44% of people lack an improved water supply and a shocking 63% have no access to basic sanitation. The Millennium Development Goals have set a target to halve by 2015 the proportion of people living without sustainable access to a safe drinking water supply and basic sanitation. But many working in the sector believe that the data underestimates the needs, and in addition have serious doubts about whether we shall approach the achievement of those targets. However, even if great progress is made in the next decade, hundreds of millions of people will remain without a safe water supply and well over a billion without a moderately decent sanitation system. These people will be those living in the poorest conditions, the most difficult to 'reach'. Better targeting and prioritization of effort and resources is still needed. As described here, those affected by HIV/AIDS are amongst the most vulnerable and their particular needs must be given priority.

The points made clearly in this paper, based on detailed research, include many of the general issues that have been promoted as good practice in the water and sanitation sector for at least twenty years. These include better consultation with the users in planning both approaches and facilities, building on local knowledge and practices, and improving coordination with other sectors, such as health and education, and with other programmes, in this case home-based care services. Sadly, too many water, sanitation and hygiene projects still do not take sufficient consideration of these issues. However, people living with HIV/AIDS and their families, as well as carers, communities and others affected by the disease have particular needs, most of which, as described here, can be simply addressed if we only consider them in planning how to do our work.

This paper is a useful and striking addition to the limited literature on this important subject. But such research and writing is not enough. The messages put so clearly here must be taken to heart by the thousands involved in the HIV/AIDS and environmental health sectors. It is important that those working with international and local NGOs, as well as local government departments, should modify their attitudes, thinking and practices; equally, donors, who support such programmes, need to adapt their funding strategies to support those working in appropriate ways. Together, they can make a huge difference to the lives of those suffering from the HIV epidemic.

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-CONTENTS-

| | |
|--|----|
| INTRODUCTION | 6 |
| THE SOCIO-ECONOMIC IMPACT OF THE HIV VIRUS | 8 |
| THE WATER, SANITATION AND HYGIENE SECTOR;THE LINK WITH HIV | 12 |
| ✿ HYGIENE AND ILLNESS | 13 |
| ✿ ACCESS TO WATER SOURCES | 15 |
| ✿ WATER QUANTITY VERSUS WATER QUALITY | 18 |
| ✿ THE COST OF WATER | 21 |
| ✿ WATER MANAGEMENT: WOMEN AND CHILDREN, THE WATER BEARERS | 22 |
| ✿ SANITATION | 24 |
| HEARING ALL COMMUNITY VOICES | 28 |
| CONCLUSION | 31 |
| REFERENCES | 33 |

-INTRODUCTION-

Cecelia's story

In a community in the Copperbelt of Zambia, a young girl wakes up at four o'clock in the morning; the sun has not yet made an appearance, and the rest of her family are still asleep. She grabs two 10-litre containers and starts walking. Twenty minutes later, the sky is a little brighter and she has reached the river at the bottom of the hill. Rather than scoop up the river water – which will probably be polluted from all the washing, bathing and grazing that goes on here – she heads a little further down the well-trodden path to a small pond, which she hopes is cleaner. Yet the cleanliness of the water is not really important. What is important is that she does not have to pay for the water, nor will the pond run dry, nor is it a long distance away. Now she fills her two containers; one goes onto her head with a hand up for support, and the second she carries in the other. The walk back is uphill, and now with 20 litres of water (a weight of 20 kilograms), it will take her almost an hour to reach home. She washes herself with as little water as possible, uses the toilet at her neighbours' house, dresses, and then runs to school to be on time. If she is late, she will be punished by her teacher. Meanwhile, her sister has collected the two containers, which have been emptied into household buckets, and has started off on the journey down the hill to collect some more.

Cecilia is 65 years old and the two girls above are her grandchildren, Elizabeth and Beauty. The girls' parents have died, victims of the HIV pandemic spreading across this region, and Cecilia is their primary guardian. Sitting on the floor of her small house, Cecilia explains how difficult she finds it to send the girls, aged 10 and 11, to the river when the hand pumps are broken and the wells are dry. Cecilia occasionally collects water herself during the day but does not have the strength to go repeatedly. Instead, she may have to send her granddaughters again after school; they also struggle with the weight of the containers but are fitter than her. As a result, they will use the minimum amount of water for cooking, cleaning and washing, which will increase the risk of disease being spread amongst the family.

This is a common scenario for countless families affected by HIV/AIDS throughout the world, especially in sub-Saharan Africa, where Action Against Hunger, as a part of the ACF International Network (ACF-IN), has been active in addressing the impact of HIV/AIDS on hunger. The relationship between malnutrition and HIV/AIDS is well documented. People living with HIV require extra energy intake and a healthy balanced diet to help maintain good nutrition status and immunity to infections. If such improvements in diet are not possible, nutrition status and the level of immunity will suffer. Once immunity is reduced, pathogens that are normally harboured in the body without any adverse effect can become life threatening infections in those with HIV/AIDS, leading to malnutrition and potentially death. In summary, those infected with HIV often suffer from malnutrition as a consequence of illness, and those who are

malnourished are at a greater risk of further infection. The cycle continues until dietary intake and health care is improved.

Despite the large body of research that currently exists around issues of HIV, there is a need to look closer at the link between HIV/AIDS and water, sanitation and hygiene. Many infections that lead to sickness, diarrhoea and ultimately malnutrition stem from poor sanitation, reduced access to water, poor quality drinking water, and poor awareness of hygiene practices and the capacity or resources to implement such practices. For those living with HIV, the risk associated with poor sanitation, poor quality water and hygiene practices, is even greater. This risk is related not just to the generally weakened status of the immune system but also to the necessity of HIV-positive people to maintain their well being at a high enough level to earn income for food and health care, as well as carry out their daily chores and activities. Like food, and perhaps more so, water is a human necessity. If water is not sufficient in quantity or quality to meet the needs of each individual, life itself can be threatened. This study, conducted in the Copperbelt region of Kitwe in Zambia, looks at how HIV impacts on individual and household needs in the water, sanitation and hygiene sector. The findings of the study contribute to a practical understanding of water and sanitation projects in areas of high HIV prevalence.

WORKING WITH LOCAL PARTNERS FOR A BETTER UNDERSTANDING

Local organisation CINDI (Children in Distress) has been working in Kitwe District in Zambia since 1994, supporting the orphans and vulnerable children of the Copperbelt region. They currently maintain a register of 9,000 children. The majority of the children registered have been orphaned by HIV/AIDS. Some have moved to extended families, adding to already large family sizes; many others are cared for by grandparents or slightly older children, who take on the running of the household themselves if there are too many younger children for a relative's household to absorb. Assisted by Action Against Hunger, CINDI helps in providing access to vital education, healthcare and support facilities.

Using the CINDI register and their knowledge of the district, two areas were selected for the purposes of this study. Both were known to be facing particularly serious water and sanitation issues. From these two areas, 62 household heads were interviewed, from a mix of female, grandparent and orphan headed families affected by HIV/AIDS. Interviews were also held with 18 individuals personally living with HIV/AIDS. To obtain more information from the wider community, the interview results from household and individual level were then used to determine key areas for focus group discussions with separate groups of men, women, grandparents, orphans and vulnerable children.

Drawing from this research, it is possible to take a deeper look at the specific challenges faced by families affected by HIV with regards to water and sanitation.



THE SOCIO-ECONOMIC IMPACT OF THE HIV VIRUS

With HIV currently prevalent in 17% of Zambian adults , including one in every five adults in the Copperbelt Region (see Figure 1), many households are now headed by grandparents, widows, and orphans.

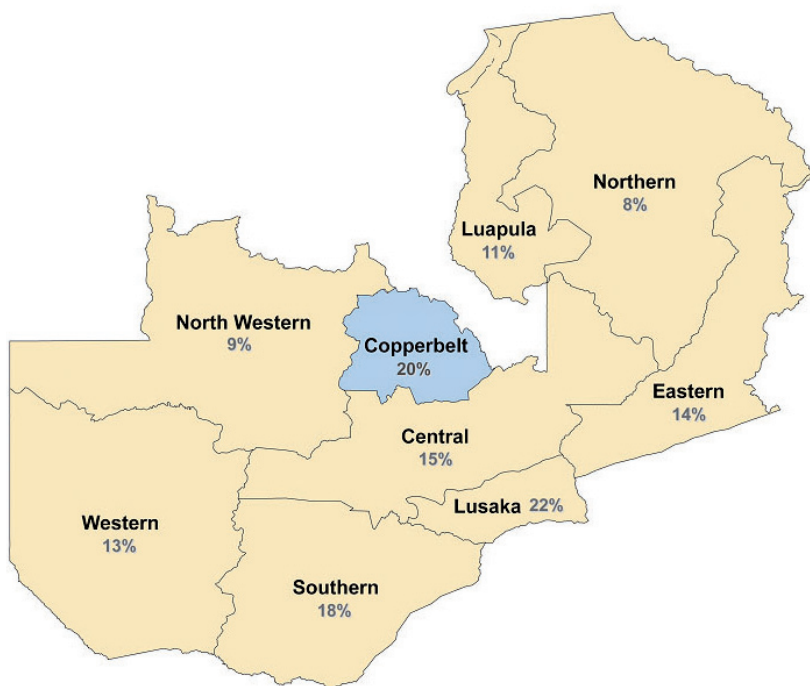


Figure 1. 2002 HIV Prevalence (ages 15-49). Provinces in Zambia, National AIDS Council, Zambia (2004).

The loss of productive adults has hurt families and communities immensely. Homes that have lost a breadwinner often face financial difficulties because of the reduced availability of income opportunities, which in turn lowers their access to food, health care and education. HIV/AIDS causes a downward spiral of unemployment, poor health and poverty, with the sick often growing weaker because of poor diet and low income. Figure 2 summarizes the socio-economic impact of the epidemic.

The psychosocial impact of HIV is also considerable. Families struggle with everyday chores whilst caring for sick family members and suffering the emotional consequences of losing parents and children; depression, anxiety and post-traumatic stress are all frequent symptoms for those left behind after an AIDS-related death. Psychological effects on children are of special concern. Nearly half of guardians in Kitwe district believe that orphans and vulnerable children feel differently than other children. As Figure 3 shows, the primary reason for this is that children, especially girls, are often

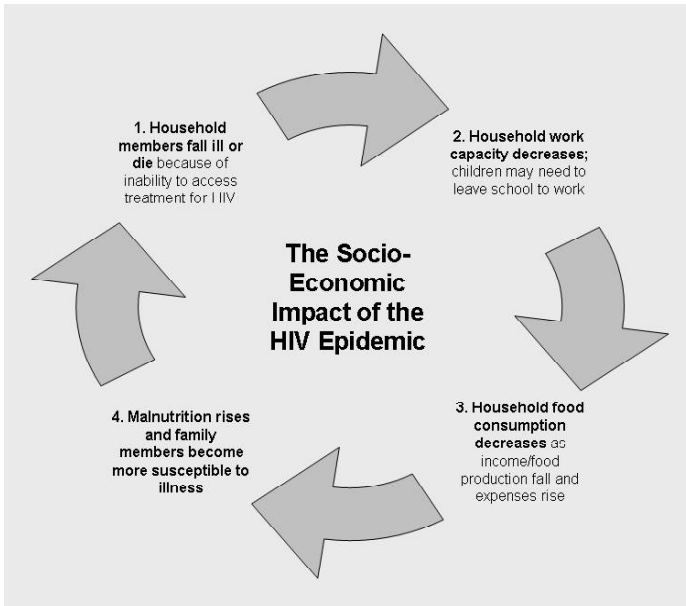


Figure 2. The Socio-Economic impact of the HIV Epidemic. Adapted from UN Department of Economic and Social Affairs/Population Division (2004) ref7

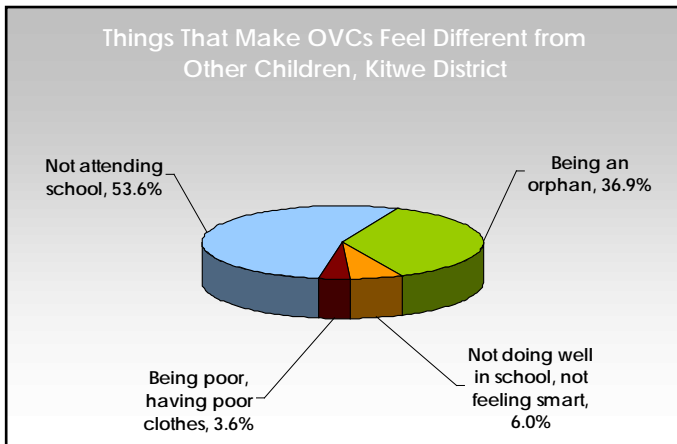


Figure 3. Things that make orphans and vulnerable children (OVC's) feel different from other children, Kitwe District, Copperbelt Province. Source: FHI 2002:56.

removed from school in order to work, farm and maintain the home. Other factors, including the simple fact of being an orphan, also influence children's perceptions of themselves.

In the Copperbelt, the communities themselves are largely responsible for the construction of new water points such as wells and boreholes, as well as latrines for sanitation. However, in areas where the economic impact of HIV/AIDS weighs heavily, the lack of cash and labour required for the construction and rehabilitation of water and sanitation facilities leads to difficult issues. Is it expected that an 85-year-old grandmother is able to dig her own pit latrine? Or to ask a family headed by a 16-year-old boy to pay each month to the upkeep of a community hand pump.



THE WATER, SANITATION AND HYGIENE SECTOR; THE LINK WITH HIV

✿ HYGIENE AND ILLNESS

With a weakened immune system, people with HIV/AIDS are more susceptible to illnesses and disease, and often experience a slower recovery time from sickness. Pain, lethargy, diarrhoea, coughing, vomiting, fever and depression are common symptoms of HIV-related illness. Many of these symptoms are exacerbated by poor water and sanitation, and are conversely easily preventable through improved access to facilities and better hygiene.

Water is required for personal care, washing dirty linen and clothing and generally ensuring that the household is kept clean. For James, as a sufferer of persistent diarrhoea, an adequate supply of water is a critical need. Yet because he has diarrhoea and is frequently lethargic, he finds walking and bringing water back from a distant water point very demanding: "Without my mother and sister, I would not be able to collect water for myself. I don't know what I would do."

As people with HIV/AIDS become sicker, a significant burden of caring for the ill is often placed on friends, family members and community members. Home Based Care (HBC) projects have been set up by NGOs, religious groups and communities in Kitwe to reduce this pressure and provide support to terminally ill patients. Home-Based Carers can assist in household duties, attend to the sick and give information to family members about simple nutritional and medical care practices. However, once again, the effect of this assistance is often negated by poor water and sanitation facilities. Clean water and adequate sanitation is not only vital to protect HIV sufferers and their families from the spread of water-related disease, but is also essential for recovery from illness and to ensure that they are able to return to work and their everyday lives as quickly as possible. Hygiene practices such as hand washing, food preparation, safe water storage and disposal of household and human waste are all equally essential for all the family to protect those who are more vulnerable within the household. HBC projects target those living with and affected by HIV/AIDS, and thus water projects should coordinate with and support the potential positive effects of home-based care.

The home-based caregivers interviewed explained that HIV-affected households often find it difficult to ask for help from friends and neighbours to collect water. Besides the fact that collecting water is a time consuming and laborious commitment, the stigma attached to the virus makes some neighbours unwilling to help. However, in an area where almost one-fifth of the population is thought to be HIV-positive, community support is more vital than ever. Water projects need to ensure not only that the sick have access to adequate water and sanitation facilities, but also simultaneously need to attempt to overcome the stigma remaining within the communities. Fear and discrimination against people living with HIV/AIDS can discourage people from going for testing and treatment or to reveal their status to their loved ones or employer. Whether a project is focused on care, prevention or water and sanitation, building

community awareness to address myths and tackle discrimination around HIV issues is a necessary component.

During the individual interviews, a number of people reported that they believe sharing a toilet with someone who is HIV-positive would put them at risk, and a small proportion openly admitted they do not want to do so because of fear of contracting AIDS. Likewise, some feel that the virus is transmitted by air, touching or sharing cups. There is clearly a need to continue addressing such myths. Reassuringly, the interviewed orphans and vulnerable children were the best informed of all the respondents, and welcomed the opportunity to ask further questions and receive unbiased informed answers. The simple message that HIV can only be transmitted through the exchange of bodily fluids – during unprotected sexual intercourse, through blood transfusions and the sharing of contaminated needles and syringes, and from mother to child during pregnancy, delivery and breastfeeding – needs to be continually emphasised.

The risk of mother to child transmission of the virus through breastfeeding is a particularly important topic that should be further analysed in the context of safe water and sanitation. Whilst formula milk, if used exclusively and with safe water and adequate training, eliminates the risk of HIV infection from breast milk, there are a number of external factors that discourage the use of formula and rather support exclusive breastfeeding in the majority of developing country settings. Formula requires a secure and constant supply of clean water; the added expense of formula and costly firewood for boiling and purifying water necessitates a regular income. In addition, the availability of formula may be sporadic, dependent on market access and fluctuating market prices. Knowledge of correct mixing is also essential. Finally, it is also important to recognise that caregivers who formula-feed need to be confident about the disclosure and acceptability of their HIV status, as they are likely to be asked by family and friends why they are not breastfeeding.

Due to all of the above concerns, formula feeding would not generally be recommended in the situations in which Action Against Hunger are working. The current WHO recommendations for infant feeding in HIV state that exclusive breastfeeding for the first six months should be the recommended choice unless it is 'affordable, feasible, acceptable, sustainable and safe' (AFASS) to use a breast milk alternative. Without safe water, this choice will never be an option available to HIV-positive mothers. However whether or not the mother makes an informed choice to use a breast milk alternative (or if the baby is unable to breastfeed for other reasons), the supply of safe water for infant and young child feeding is absolutely essential in terms of child survival, as diarrhoea is responsible for nearly one-fifth of infant and child mortality.

ACCESS TO WATER SOURCES

The strain of collecting water in the dry season, when there is little or no rainfall, puts many households under pressure. Boreholes and wells experience dry periods, and rivers and streams become more frequently used in the absence of rain; Figure 4 shows the main water sources people use in different seasons.

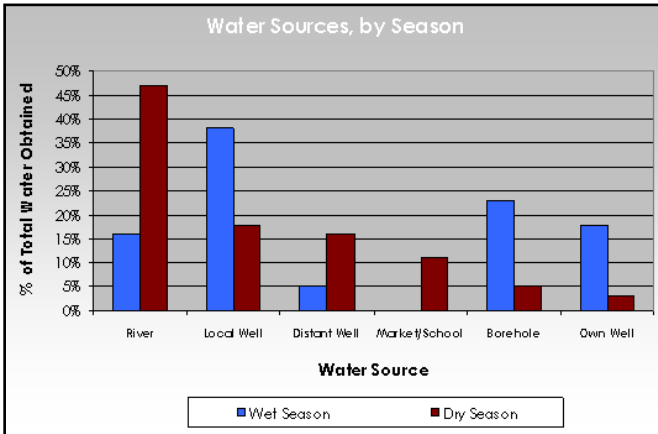


Figure 4. Water Sources, Wet and Dry Seasons.

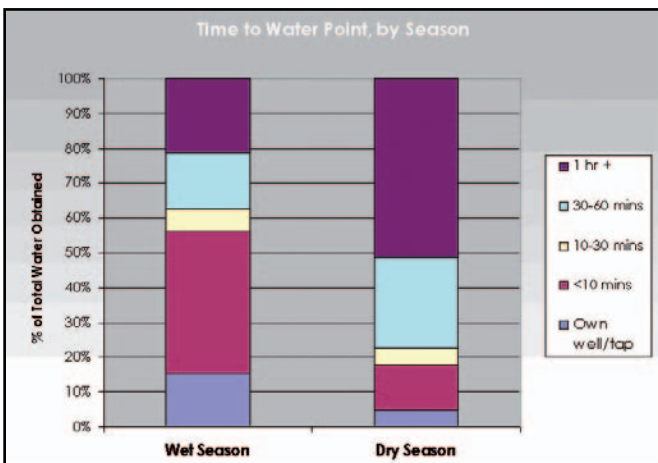


Figure 5. Time taken to reach water point, by season.

There is a significant increase in journey time during these drier months, with three-quarters of people taking at least half an hour to reach their water point, time that could be better spent in their farms, schools or homes. Figure 5 shows how the change in water point is reflected in the distance and time taken to reach it. As in the case of Cecilia and her granddaughters, the time taken on the return journey, weighed down by the water, will be significantly greater.

Even in the wet season, one in six homes continues to use the free but polluted river as their main water source. This is not only because local wells and boreholes run dry and break – pumps in a state of disrepair are numerous throughout Kitwe District – but also because such technologies may be expensive and labour-intensive to use. In addition, as Leya Banda, a mother of two and grandmother of six, explains, using constructed water points can be time-consuming: “we must queue for a long time to use the borehole; one person may bring many containers to fill. The queues are too long and the pumps break easily because many people use them...we collect water from the river because it takes less time than waiting for the queue”. Families also collect rainwater from theirs and their neighbours’ roofs as much as possible; during our interviews, discussions were occasionally suspended whilst respondents went to replace the bucket under their corrugated iron roofs.



Rivers, although often polluted, are a commonly used source of water for many families in the Copperbelt.

Simple measures can be taken to protect and improve the reliability of those constructed water points which do exist. An ordinary bucket and windlass (similar to a

winch) would make lifting water much easier and reduce the burden of this essential, daily chore. By building a raised headwall and cover, contamination from surface water and debris can be prevented and also reduce the danger of children falling into an open well. Likewise, fencing and overflow drains will prevent animal contact; animals often graze near the water points and are a major source of contamination to the water used by numerous families for drinking and cooking. Digging wells deeper will enable a reliable year round water source and, lining them where possible with locally available materials, will both prevent the walls from collapsing ensuring the sustainability of the water points and allowing safer maintenance when young boys enter inside them for annual cleaning.



An example of a windlass in a similar Action Against Hunger community project in Zimbabwe

There is a clear need for water projects to consider the specific needs and capabilities of those who collect water and are responsible for its upkeep, especially where there is a high proportion of sick, young and elderly people using the water point. Durable, simple technologies must be in place, not only to ensure the protection and safety of the water point but also to reduce the potential burden caused by an unreliable system, which can push people to walk further to find another, more reliable source. As schedules are already constrained by continual hours of farm work and household chores, it is not surprising that often families choose to use less water to reduce the time spent in water collection. Where the turnover of trained water staff and pump-minders is

high, communities should encourage the widespread dissemination of knowledge to ensure that information and skill is not lost as the impact of HIV continues to eliminate so many active members of society. This further emphasises the need to utilise straightforward and easily repairable systems. In short, the preferences and suggestions of all members of the community should be considered to ensure that water projects are designed well, maintained regularly and repaired promptly.



Water containers waiting to be filled in a queue at safe waterpoint outside of Twatemwa Primary School

✿ WATER QUANTITY VERSUS WATER QUALITY

James, a 22-year-old HIV sufferer, lives with his mother, sister and a number of friends and relatives. When we arrive for our interview, he is lying on a chair at home, too weak to move or even cough; he has recently been sick with tuberculosis and currently spends his days in bed recovering. James' older sister died in 2002 during childbirth and the family now cares for her two young children. A number of teenagers live in the house also, some of whom have run away from home and many others who have been orphaned. James' mother doesn't turn them away, as "they have nowhere to go". The household finds money where they are able, in the fields and through small income generation projects started with the help of CINDI.

The water needs of the household are considerable. James explains that he has been recommended to drink at least five litres of water each day by the local clinic. He suf-

fers from frequent diarrhoea and must drink more water to compensate for the loss, in addition to the water needed for his personal hygiene. Many of the family's guests are sick or young and cannot manage to walk to the Kafue River, a two-hour round trip, to collect their daily water supply. Instead, they use the little money that they do have to buy water from the market or a tap at the local primary school. James and his sister explained that the water available at the market is polluted river water, brought in big containers to sell. For this reason, the family also try to buy chlorine to treat the water. As a result of buying water by the bucket, they can only afford 100 litres on average each day for the whole family, a much too-small amount for a household currently consisting of nine people. The minimal quantity of water recommended for drinking, cooking and personal hygiene is 20 litres per person, per day (WHO recommendations 2003) although in extreme emergency, the minimum can be lowered to 15 litres per day (Sphere 2004). This is about the average capacity of a household bucket. Yet, for people living with HIV, even 20 litres a day per person may not be enough. The volume of water required for regular drinking, additional hygiene practices and agriculture is likely to be much higher.



Home nutrition garden in Zambia

As part of their activities, CINDI has been helping households to create small nutrition gardens, providing seeds and materials with the aim of improving the nutritional status of the household through an increased access to supplementary vegetables. It is

especially important for the sick to maintain a balanced diet to help support the immune system. The staple Zambian food is a maize meal (called “nshima”), eaten with a sauce of vegetables, meat, fish and/or groundnuts. The nutritional content of the meal depends critically upon the availability and cost of the ingredients for the sauce. Thus home gardens, which can provide nutritionally rich vegetables to include in the sauce, are often promoted as a way to achieve added food security.

It is essential that people with HIV/AIDS are able to work in their gardens and that they have a reliable water source for irrigation within a reasonable distance of their homes. At those times of year when the water source is at a further distance, it is impossible for many to collect the extra water required for the garden.

In addition to access, water quality is also a concern for many of the people with HIV/AIDS we interviewed. Many reported buying chlorine to treat their drinking water, even at times of financial hardship, as they appreciate the benefits it brings. One person explained: “I always suffer from diarrhoea... if I didn’t buy chlorine, I wouldn’t be able to work or go to the farms”. Approximately three-quarters of the people with HIV/AIDS we interviewed use some form of water treatment method, although some only occasionally. Those that only occasionally use treatment, or not at all, said this is due to cost, and that they



CINDI community worker in Luangwa treating water with chlorine

would purchase chlorine if it was affordable, as they recognize its health benefits. Boiling water is an adequate alternative but requires extra firewood and, as with water collection, this is a time-consuming and exhausting task; most of the families we interviewed were unable to obtain enough wood to boil water. The inability to boil or treat water drives many families into a worsening situation of poor health and reduced income, as the frequency of illness increases.

✿ THE COST OF WATER

State-funded expansions to the water and sanitation system in The Copperbelt are rare. In fact, most construction and rehabilitation of systems occurs by either the private or development assistance sectors. Communities are therefore themselves largely responsible for the production and upkeep of systems. Contributions from community members are necessary to make funds available for construction, maintenance and repairs.

But what happens if a family cannot pay for the upkeep of a borehole or pump? As described previously, they are likely to seek out alternative, free water sources. Or they obtain the funds by taking away money allocated to other critical needs, such as school fees, medical treatment, purchased food, or agricultural inputs. Thus it is critical that not only should a water point be affordable, but it must also be well managed to ensure that it can be quickly and efficiently repaired in the event of a breakdown; the investment that poor families put into water access can be considerable, and interruptions to access are therefore costly. Broken hand pumps, originally built by NGOs, businesses and communities, scatter the Copperbelt. It appears that some communities are simply unable to pay for the maintenance of these water points. The cost of water point maintenance thus becomes an essential factor in its longevity, and should be considered during the original planning and implementation of the project. However much emphasis is put on 'affordable' projects, though, in light of the economic decline amplified by HIV/AIDS some families may not have even small amounts of cash to contribute. Can a grandmother of two young children be expected to pay what little income she earns for use of a hand pump, when obtaining water from the river, although it may be polluted, is free? Therein lies the risk of improved but unaffordable or poorly managed systems: free water sources then become a more attractive alternative, however polluted. An emphasis is greatly needed on affordable water points – not 'affordable' in the sense that a well-organised monthly debit to a water committee will allow ongoing maintenance to be arranged, but rather affordable in a sense that the occasional expense of repairs is low enough that even the poorest of households find maintenance a reasonable cost.

In terms of technology, existing water points should be utilised and protected wherever possible, building on local knowledge and technologies. A hand-dug well can be protected from pollution and dug deeper to maintain a good year-round water supply. Essential maintenance materials for hand-dug wells include only the occasional replacement bucket or rope – readily available and cheap materials. Projects should be encouraged to involve themselves with the coordination and cooperation of all community members, rather than outside agencies introducing new and potentially less sustainable approaches.

✿ WATER MANAGEMENT: WOMEN AND CHILDREN

THE WATER BEARERS

Children, particularly the girls, are often the water bearers for their families, especially in HIV-affected households. Even when a community hand pump or well is accessible, the technology can be difficult to use. Younger children under the age of 12 years explained to us they find pumping difficult because of the height of the handle, and often need to ask for help. However, help is seldom or reluctantly given, as the physical exertion of collecting and pumping water is considerable, and few families have the time and energy to consistently help others once they have collected their own supply. One committee member aired the frustration that children often broke the pumps and should not be allowed to use them; but the reality is that the children have no other way to operate the pumps other than jumping on the handle, as this is the only way they can reach high enough to operate them. Instead of prohibiting children from using pumps, the technologies should be adapted to meet their needs.



Although a hand pump can be tiresome to use continuously, lifting water on a bucket and rope is even more so. Most private wells in the Copperbelt are dug by hand, sometimes up to 15 metres in depth, and have unlined walls, making the sides prone to crumbling and making the water point impossible to maintain and clean. The opening on the surface is usually unprotected and left uncovered, and a container needs to be lowered on the end of a rope to raise water. Not only are these wells unsafe for young children or the infirm, but lifting 10 and 20 litre containers is a difficult task. To

overcome this, some children were seen to be lowering smaller five-litre buckets, but a greater number of times. In either case, the effort needed to obtain enough water for the household's needs is a considerable challenge for children.

Hand-dug wells do have their disadvantages but, as many female users commented, hand pumps frequently break and a reliable system is preferred to a pump that is prone to frequent breakdown and poor repairs. As noted above, despite the fact that many pump technicians have been trained to maintain and repair the water technologies, the toll of the HIV epidemic on the young adult population has resulted in a great deal of this knowledge being lost.

Every water point or latrine needs to be sited in a location that females, in particular young females, feel is safe and suitable. We conducted a private focus group discussion with female teenagers in order to discuss their problems and concerns regarding water access. The girls talked about their fears when collecting water; on their way to a water point or a latrine, they often come into contact with local men, occasionally drunk. Secluded or unseen sites may increase the susceptibility to HIV transmission by rape, especially when out alone at night and early in the morning. This risk of assault can be minimised by specifically consulting women and girls about the location of any future project. Ideally, a water point or latrine should be located close to a public area. Lighting the area or applying 'opening hours' to the point may also create a safer environment. Clearly reliability is again extremely important; when a water point is damaged, woman and girls are forced to travel further and at earlier hours. Similarly, when latrines become full or collapse, se-



Community worker carrying water

cluded sites are sought, putting women and girls at further risk. Whilst security should be considered in any project, it is all the more vital in areas of high HIV prevalence. The needs of women and girls should be carefully considered when planning the site of water and sanitation facilities; isolated or unsafe areas need to be avoided to ensure the users' security. Clearly reliability is again extremely important; when a water point is damaged, women and girls are forced to travel further and at earlier hours. Similarly, when latrines become full or collapse, secluded sites are sought, putting women and girls at further risk. Whilst security should be considered in any project, it is all the more vital in areas of high HIV prevalence.

✿ SANITATION

Safe and comfortable sanitation facilities are an important need of those affected by HIV. For example, for diarrhoea sufferers, there is an obvious need for easy and frequent use of a toilet, in addition to an adequate supply of safe drinking water to prevent dehydration and further sickness. However, pain and fatigue may lower the mobility of the sufferer, making the simple everyday task of accessing and using a toilet unnecessarily complicated. Easy access to a latrine is not only important to reduce the burden associated with what should be a straightforward trip to the toilet, but also to maintain the dignity of the affected person.

James, the 22 year old whose plight was illustrated earlier, only has access to a neighbours' latrine, as the family cannot afford to build one for themselves. Having little strength, he must often be supported to go to the toilet. Like James, half of the people interviewed with HIV have difficulty using a pit latrine. Squatting can be very tiresome when a person is weak with little energy, but for those without the benefit of flush toilets – which use valuable water – they have little option but to utilise what they have available. One lady described using a bucket inside her home to allow her the comfort of sitting, and disposing of the waste later. However as much of a benefit this provides to this lady, there is a certain level of discomfort involved, as well as a lack of dignity. It also creates an added risk of faecal-oral transmission to those who may assist in emptying the bucket, especially if there is minimal water available for household hygiene.

At the time of our research, 61% of households had access to their own latrine, although this percentage differed by the type of household (Figure 7). The remaining 39% of families that do not have a latrine reported they are neither able to construct the pit themselves nor to pay someone to build it for them; these are often households without an able-bodied male member. Such families are forced to use a neighbours' latrine or the surrounding outdoor areas – with the attendant lack of dignity brought about by either having to gain permission to use basic sanitation facilities or defecating in the open.

Given financial and labour resources, however, solutions are available. A pit latrine

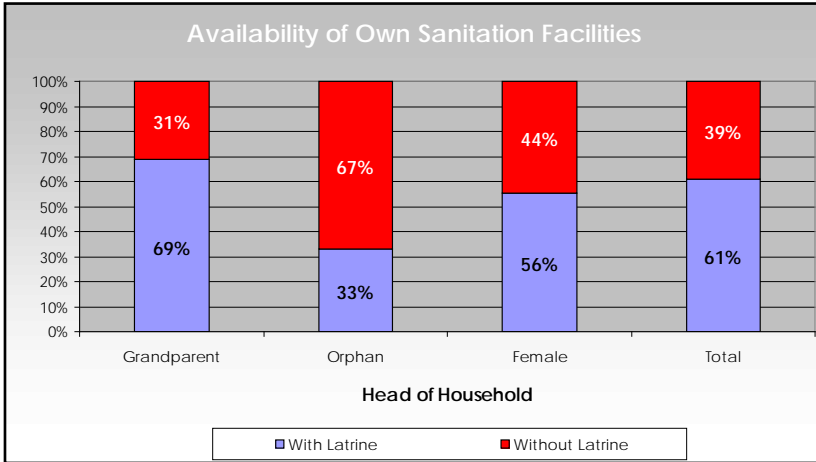


Figure 7. Availability of own sanitation facilities, by household type

can be built from locally available materials such as straw, canvas sacks, brick and wood, depending on the cost and availability. A relatively simple and cheap latrine can be created by digging a small hole and placing a row of branches for standing, with a wall of grasses and no roof. The family can be assisted in the building or replacement of latrines by labour support through home-based care services, community loans of tools, and other means.

Even for those households that do have the 'luxury' of their own sanitation facility, the rainy season has a major impact, with many pits prone to collapse or filling with water. The walls of the latrine – whether made of grass, canvas sacks, mud or concrete – and the pit itself require constant maintenance. When asked whether they would be able to replace their toilet in the event of a collapse, 45% of respondents consider themselves unable to either pay for or construct a new latrine



Latrine made of grass and canvas sacks

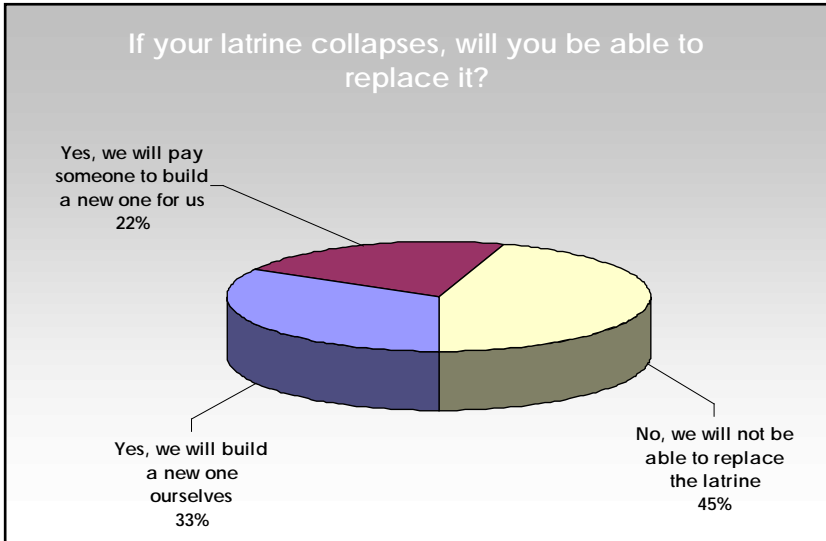


Figure 8. Ability of households to rebuild collapsed latrine



Latrine on the verge of collapse

themselves (Figure 8). Even if a family has the labour to dig, but lacks tools, constructing a new latrine will be impossible. Two women told me that they do not use their latrine in the rains for fear of it falling in, and have often woken up after a stormy night to find that the walls have washed away. This can only further encourage the spread of disease during the wetter months, when diarrhoea and malnutrition are already at their peak.



HEARING ALL COMMUNITY VOICES

Children and women throughout the world are responsible for household water collection, and the water and sanitation sector has become increasingly conscious of the need to include local women at all stages of planning and implementation. Yet we found in our study that women are often still excluded from community decision-making processes. The women we talked to in our discussions, especially the widows, feel that they are highly unlikely to be asked their opinions. In addition, children are also the primary water-bearers and their specific needs – easily utilisable technologies, close distances to water points, etc. – need to be addressed.

John's story

At just 19 years old, John is the head of his household; he takes care of ten other family members, mostly teenagers. The family collects water from the river, both because it is free and also to save time for school and work. Although John would like to have a voice in planning and managing future water points, decision-making within communities in Kitwe District is often in the hands of the influential, higher earning males. John does not attend community meetings because he does not feel his opinion would be considered or valued; although he is the head of his household, he is young and considered uneducated and inexperienced. Without his elder family members to consult for guidance, he has no one with which to discuss community or family matters.



Women's focus group discussion in Luangwa

Women and children have an important role to play towards the development of water resources and sanitation practices. They are the most frequent users of the improved technologies and resources, and their opinions need to be heard, whatever their age or status in the community.

However, in the context of the HIV/AIDS epidemic, a particular emphasis is not only needed on women in the community, but all those that are considered vulnerable. As a household loses its main breadwinner, it may also lose its ability to cope at times of hardship and find everyday activities increasingly difficult. In turn, the household may lose its voice within its community. It is the needs of all of these families affected by HIV/AIDS to which projects need to adapt.

Without hearing the opinions of all of these unheard groups, water point projects will not address the needs of those that find water collection a critical need and a particularly difficult struggle.

-CONCLUSION-

HIV does not kill immediately, but rather weakens the patient's immunity, making them susceptible to infection and disease. The economic, social, demographic and psychological impacts of the epidemic are immense. Stigma and discrimination are further threatening and may negate or dilute the positive effects of available counselling, testing and Home-Based Care programmes. HIV needs to be mainstreamed into all development projects, particularly in those areas of high HIV prevalence, and especially within the water and sanitation sector. A greater emphasis is needed on durable, affordable and maintainable systems to prevent further sickness within already vulnerable populations.



A number of factors need to be considered within the water and sanitation sector to ensure that not only are the most vulnerable households targeted and included within the decision-making, but also that projects do not further assist the risk of transmission of HIV/AIDS. Projects must allow for the capabilities of those collecting water, especially the young, sick and elderly. Water and sanitation facilities should be sited at a closer distance to reduce the burden of water collection, and isolated and potentially unsafe areas should be avoided to ensure the users' safety and security as much as possible. Increasing the capacity of safe water storage in the household can encourage water collection at safer and more convenient times

of day. The location should be discussed with the community itself, especially women and others whose opinions may be overlooked. This will ensure that the often-unheard community members are considered, and also help to address stigmatisation. Likewise, hygiene promotion activities can address myths and discrimination by including HIV/AIDS awareness messages, as well as providing sound personal-care advice for families living with HIV.

The technology of water points should build on local knowledge to prevent the loss of existing expertise and ensure that systems are understood and can be repaired when necessary, rather than introducing 'improved' systems with a greater cost and risk of breakdown. At the same time, water points need to account for the greater volume of water required for washing, drinking, personal care, cleaning, and agricultural needs whilst maintaining easy usability for the young and infirm. For those unable to squat or use latrines that are not in close proximity to the home, use of homemade commodes with targeted hygiene education for carers should be considered.

Improved water systems do come at a cost. Community contributions encourage a sense of ownership of the programme and make funds available for future repairs. In general, any water and sanitation project should consider the affordability of the system in place. HIV/AIDS has had a significant economic impact at household and community level which needs to be taken into account during the initial discussion period. Not only should the system be affordable, but it should be well managed to ensure that in the event of a breakdown, it can be quickly and efficiently repaired. The need for trustworthy and community-elected pump minders and water committees was highlighted in a number of group discussions. The participation and consultation of the communities is invaluable in order to ensure that a project reaches all its beneficiaries and remains entirely sustainable. It is particularly important to include those families that may be overlooked or whose comments are less likely to be considered. This is especially important when deciding where to construct a water point.

'Mainstreaming' HIV/AIDS must go further than considering the messages and the impact of the epidemic; projects must be adapted to cater for the needs of those affected. The water and sanitation sector offers a valuable doorway into understanding and assisting community practices and ensuring that simple, essential everyday activities become less of a burden for the most vulnerable households.



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WATER AND HIV: WORKING FOR POSITIVE SOLUTIONS

In this report, researcher Jennifer Organ looks at the striking relationships between the HIV pandemic and access to safe water and sanitation among impoverished families in the developing world. The focus is on the Copperbelt region of Zambia, where nearly one of every five adults is afflicted with the virus, and where many families struggle to have regular access to clean water and safe sanitation systems. Often, the result of these difficulties is hunger and sickness.

Many infections that lead to malnutrition and illness stem from poor sanitation, reduced access to good quality drinking water, and low awareness of hygiene practices or the capacity or resources to implement such practices. For those living with HIV, the risk is even greater. This risk is related to the generally weakened status of the immune system among HIV-positive people, which means that poor water, sanitation or hygiene can lead more quickly to serious illness. In addition, it is vital for HIV-affected families to maintain well-being at a high enough level to be able to work to obtain food, medicine and other essential needs.

Despite the severity of the situation, solutions are indeed possible, as the report outlines. Improved consultation with HIV-affected families in planning and implementation of water and sanitation projects is crucial, although committed preliminary efforts to overcome stigma and discrimination within communities may be necessary before such inclusion can realistically occur. In addition, enhancing coordination between water and sanitation projects to other initiatives within the health and education sectors is a very important step.

