HIV/AIDS and water, sanitation and hygiene

Thematic Overview Paper

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Please note that the TOPs are a web-based series. However, we feel that those who don't have access to the Internet should be able to benefit from the TOPs as well. This is why we have also made them available as paper versions.

The structure of the TOP web pages is different from that of the paper documents. We have tried to accommodate that by placing the links in footnotes of this document and also by placing information that is not part of the running text of the web version, in the annexes of this paper version.

However, you may still come across some sentences or paragraphs that seem a bit strange in this paper version. If you do, then please keep in mind that the TOPs are primarily intended to be web pages.

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Thematic Overview Papers (TOPs): an effective way to TOP up your knowledge

Do you need to get up to speed quickly on current thinking about a critical issue in the field of water, sanitation and health?

Try an IRC TOP (Thematic Overview Paper). TOPs are a new web-based initiative from IRC. They combine a concise digest of recent experiences, expert opinions and foreseeable trends with links to the most informative publications, websites and research information. Each TOP will contain enough immediate information to give a grounding in the topic concerned, with direct access to more detailed coverage of your own special interests, plus contact details of resource centres or individuals who can give local help. Reviewed by recognised experts and updated continually with new case studies, research findings, etc, the TOPs will provide water, sanitation and health professionals with a single source of the most up-to-date thinking and knowledge in the sector.

Contents of each TOP

Each TOP consists of:

- An Overview Paper with all the latest thinking
- Case studies of best practice
- TOP Resources:
  - links to books, papers, articles
  - links to websites with additional information
  - links to contact details for resource centres, information networks or individual experts in your region
  - a chance to feedback your own experiences or to ask questions via the Web.

To help those who have little or no access to the Internet, the TOPs will be available in hard copy format too. IRC will produce printed copies at intervals, and the website will contain a .pdf version of the most up-to-date version, so that individuals can download and print the information to share with colleagues.

The TOPs are intended as dossiers to meet the needs of water, sanitation and health professionals in the South and the North, working for national and local government, NGOs, community-based organisations, resource centres, private sector firms, UN agencies and multilateral or bilateral support agencies.

Not all the information will be of interest to everybody. The strength of the TOPs is that you can easily find the parts that matter to you. So, if you want to be up-to-date on what is happening in this important sector, don’t search around aimlessly; go straight to the TOP!

1. HIV/AIDS and water, sanitation and hygiene

1.1 How to make the most of this TOP

IRC's Thematic Overview Papers (TOPs) aim to give their readers two kinds of help:

- Easy access to the main principles of the topic -- in this case HIV/AIDS and water, sanitation hygiene -- based on worldwide experiences and views of leading practitioners.
- Direct links to more detailed explanations and documented experiences of critical aspects of the topic on the world wide web.

This top is relevant not only for those countries that are already highly affected by the epidemic (mainly in Africa), but also those countries with rapidly increasing infection rates (in Asia and Eastern Europe) and those that are in the beginning stage or not yet affected by the epidemic.

This TOP deals with the following topics:

- Some of the basic facts about the HIV/AIDS epidemic.
- The linkages between HIV/AIDS and water, sanitation and hygiene from different perspectives: health, human rights, gender, community-driven development and poverty alleviation.
- The impact of HIV/AIDS on water and sanitation organisations and service provision, in particular in terms of addressing their mandate and responding to the challenges posed by HIV/AIDS.
- The impact of HIV/AIDS on the financial, social and economic feasibility and sustainability of water supply and sanitation (WS&S) systems.
- The impact of HIV/AIDS on the demand for accessible, reliable and affordable water and sanitation services, including the planning and policy implications.
- The lessons learned in preventing and mitigating the effects of HIV/AIDS, both outside and inside the water and sanitation sector.
- What the water and sanitation sector can do about the problem of HIV/AIDS at different levels.
- Top resources: publications, websites, contacts and toolkits.

2. Why this theme matters

2.1 Impact of HIV/AIDS

AIDS has become the most devastating global epidemic the world has ever faced. At the end of 2001, an estimated 40 million people globally were infected with HIV. Over 5 million people are newly infected each year and more than 6 thousand lives are lost every day to the disease. For the latest update on the epidemic see: http://www.unaids.org/worldaidsday/2002/press/Epiupdate.html.

The impact of HIV/AIDS is unique because it kills adults in the prime of their lives thus depriving families, communities and nations of their young and most productive people. Moreover, the slow attrition of the chronic illnesses associated with AIDS saps the resources of families and care-givers, which has direct implications for civic participation in and sustainability of development efforts.

For the Water and Sanitation sector, this implies that the Millennium Development Goal to halve the proportion of people, who are unable to reach or afford safe drinking water, will be jeopardised. The same applies to the goal set in the World Summit on Sustainable Development in Johannesburg in 2002 to halve the number of people without access to improved sanitation.

The HIV epidemic will have a negative impact on the quantity and quality of services provided by the water and sanitation sector. Not only will the funding be reduced because of a decreased tax base and reduced government budget, but sector staff performance will also decline as a result of diminishing productivity and capacity, through staff illness and death, the lack of skills of new staff and lack of training capacity. Yet, the water and sanitation sector can and should play a very important role in prevention and mitigation of the effects of the epidemic.

HIV/AIDS has a negative impact on overall social and economic development, reducing economic viability and, potentially, the political stability of countries with high prevalence rates. In some African countries, HIV/AIDS has set back development by a decade or more. The impact of HIV/AIDS is systemic and affects development at all levels, household, community, institutional and national.

2.2 Not simply a health issue

The international community has now acknowledged that HIV/AIDS is not simply a health issue. The Declaration of Commitment, which was adopted by the UN General Assembly Special Session [1] on HIV/AIDS held in June 2001, describes HIV/AIDS as a complex medical, social, economic, political, cultural and human rights problem, which cuts across all sectors of developing societies. It also states that by 2003 HIV/AIDS prevention, care, treatment and support and impact mitigation has to be integrated into the mainstream of development planning, including poverty eradication strategies, national budget allocations and sectoral development plans.

1. http://www.unaids.org/UNGASS/index.html

The unprecedented scale and seriousness of the pandemic has consequences for the viability of achieving the Millennium Development Goals that are currently guiding developmental efforts, both national and international. Although an explicit goal is to halt and reverse the spread of HIV/AIDS, the virus impacts on many of the other goals. An overview of these can be found in the UNDP document on AIDS and Poverty Reduction [2].

2. http://www.undp.org/dpa/frontpagearchive/2001/june/22june01/hiv-aids.pdf

3. Basic facts about the epidemic

3.1 HIV and AIDS

AIDS (Acquired Immune Deficiency Syndrome) is caused by the Human Immunodeficiency Virus (HIV) that damages a person's immune system. People become infected by HIV in three possible ways:

1. Through sexual intercourse - either heterosexual or homosexual intercourse. Most infections in the developing world are transmitted heterosexually.
2. Directly into the bloodstream through use of contaminated blood or blood products, or sharing of intravenous drug-injecting equipment.
3. From mother to child. This may occur prior to birth across the placenta, during birth, or via breast milk.

The effectiveness of the different modes of transmission is shown below:

Mode of transmission	Estimated effectiveness
1. Sexual intercourse	0.1% - 1.0%
2. Through blood:	
- Transfusion	>90%
- Drug injection	0.5% - 1.0%
- Other (ex. Tattooing)	Little
3. From mother to child (around birth)	20% - 40%

In Africa over 95 % of the infections takes place through heterosexual intercourse. With the low transmission effectiveness as shown above, how it is possible that 40 million people have become are infected?

There are many different reasons for this, medical and epidemiological as well as social, cultural and economic, but one of the most influential factors is the presence of sexually transmitted diseases (STD). When a person already has an existing STD the risk of becoming infected rises 10% to 80% depending on the type of STD. Many people with STDs are not aware of their condition as not all STDs are symptomatic - this is especially true for women. Access to STD and reproductive health services is therefore very important.

3.2 Latency period and testing

Latency period

After a person is infected with HIV, there is a latency period when the person is free of all symptoms. This period may last ten years, depending on the general health and nutrition status of a person. The length of the latency period is also influenced by the number of re-infections occurring through unprotected sex with another HIV positive person. During this time there are no signs of being HIV positive and this is why 90% of infected people are not aware of their status. The only way to find this out is through testing – this is done in health centres or in specifically established Voluntary Counseling and Testing (VCT) centres that may be public or private. The tests available have improved over the past years and presently there are rapid tests that can give results within an hour. Yet, in most developing countries there are very few people who go for voluntary testing: most people see no benefit in knowing their status because there is no accessible treatment, because of cost and availability, and only stigma and

discrimination for those infected with HIV. Apart from testing, the only sign that a woman may have that she is HIV positive is through delivery of a HIV positive baby that shows signs of illness. This may or may not be followed by a test on both mother and child. Even when the test is done, many women will not reveal their positive status to their partners or families – there are too many examples of women who have been chased from the house and blamed for the infection. Needless to say, most of these women will have become infected through their husbands. An HIV test in fact tests for antibodies to the HIV virus, which can take 1-3 months to develop. A test taken immediately after exposure to HIV may be negative and needs to be repeated to be reliable. Some people take false reassurance from a negative test that has been done too early.

AIDS

The latency period comes to an end with the onset of illnesses. AIDS itself has few symptoms, but manifests itself by a break down of the immune system, resulting in vulnerability to a range of common diseases and infections. These opportunistic infections include especially tuberculosis, herpes and some forms of cancer. In addition, illnesses such as diarrhoea and malaria have a much more devastating effect on the body and its immune system, breaking this down rapidly. The opportunistic infections can be treated with the drugs that are normally used for them, but generally a person will die after a period of about two years unless treatment with anti-retroviral drugs begins before the onslaught of AIDS. Because the opportunistic infections are well known diseases, HIV/AIDS itself often remains 'invisible'. This makes it easier to deny and perpetuates the silence that surrounds the epidemic, thereby fuelling its spread.

Treatment

There is ongoing debate about how to make treatment and anti-retroviral drugs accessible to all. In the United States, Western Europe and Brazil, anti-retroviral drugs are available to all infected persons through the public health system and death rates have reduced dramatically, converting the disease into a chronic illness. The most effective treatment is called Highly Active Anti-Retroviral Treatment (HAART), a (changing) combination of three drugs, that need to be taken according to a strict daily timetable. The cost of this treatment used to be extremely high (US $10,000 per patient per year), but court cases, generic drug production and negotiations have reduced these cost to US $300 per patient per year in some countries (see WHO Scaling-up anti-retroviral therapy in resource limited settings: guidelines for a public health approach [3]).

However, the guidelines from UNAIDS, WHO and the International AIDS Society also state that ' due to the high cost of anti-retroviral drugs, the complexity of regimens and the need for careful monitoring, specific services and facilities must be in place before considering the introduction of anti-retroviral drugs in any setting'. In many developing countries those services and facilities do not exist and access to these drugs must therefore be improved together with the delivery of adequate and reliable health services for the poor.

Transmission from mother-to-child [4] can be reduced by a relatively simple and inexpensive treatment with anti-retrovirals around birth. The main problems are that

3. http://www.who.int/hiv/pub/prev_care/pub18/en/
4 http://www.who.int/reproductive-health/rtis/MTCT/index.htm

most women do not realise they are HIV positive, the effectiveness of the drugs in subsequent deliveries is being debated, and after birth, the child can still become infected through breastfeeding. While these drugs are essential to give every child the chance of a healthy life, the mother is still likely to die – raising complex questions about the subsequent fate of those children: The child may be abandoned, or taken in by the extended family, but marginalised.

3.3 Phases of the epidemic

The different phases of the epidemic are characterised by different levels of impact on different spheres of life and require different actions from the government. The table below clarifies these phases.

Table 2: Phases in the epidemic

Phase	Description	Influencing factors	Policy and programme focus
Spread of the virus	Hidden and asymptomatic, increasing number of people becoming infected	Mobility, inequalities of wealth, power and autonomy; prevalence of STDs, unemployment and loss of hope for the future	Prevention (IEC, condoms). Changes in norms and behaviour. Poverty alleviation focus
Increasing morbidity and mortality	HIV related conditions appear: illness, stigma, denial and increasing use of health care system	Extend of spread, awareness and knowledge of HIV/AIDS; prevention and care programmes; ethical and legal environment	Care and treatment, VCT, psychological support, blood security. Prevention (IEC, condoms). Changes in norms and behaviour. Sectoral support for care and treatment (health and water). Poverty alleviation focus
Social cohesion of communities affected	Children and other dependants left without support, households disintegrating, poverty spreading, community coping systems overwhelmed	Clustering of infections in households/ communities, dependency ratios, gender inequalities, social cohesion; effective prevention, care and support programmes; ethical and legal environment	Social inclusion, welfare maintenance, VCT, psychological support, poverty alleviation and assistance programmes. Legal, ethical and human rights programmes
National social and economic impact	Reduction in quantity and quality of labour in formal, informal and public sectors; reduction of productivity and national income	Political commitment, morbidity and mortality in productive labour force; clustering in occupations and geographically; structures of labour market and the economy; effective prevention, care and support programmes; ethical and legal environment	Governance, productivity maintenance, fiscal and financial policies, labour market planning, social services planning, infrastructure maintenance. Mainstreaming HIV/AIDS in all development programmes
National stability affected	Economic and social dislocation; political instability at community and national level	Political commitment, effectiveness of earlier policies; effectiveness and types of earlier prevention, care and support programmes	Governance, decentralisation, community survival strategies, mainstreaming HIV/AIDS in all development programmes

Adapted from: Regional project on HIV and development for Sub-Saharan Africa (UNDP)

The importance of knowing these phases of the epidemic lies in the fact that very often national governments deny having an AIDS epidemic starting in their country and therefore do not engage in any of the programmes that are mentioned in the table above. They can do so because in the first three stages the effects are felt predominantly at the household and community level, often surrounded by denial and stigma. Moreover, when action is taken it tends to be confined to the health sector. As is shown in the table above, responsibility for most of these policies lies with sectors and ministries other than health. An early understanding of this can create a broader consensus on the need for timely expenditure on effective prevention programmes in a multi-sectoral perspective. The financial implications of ignoring the epidemic are shown in figure 1.

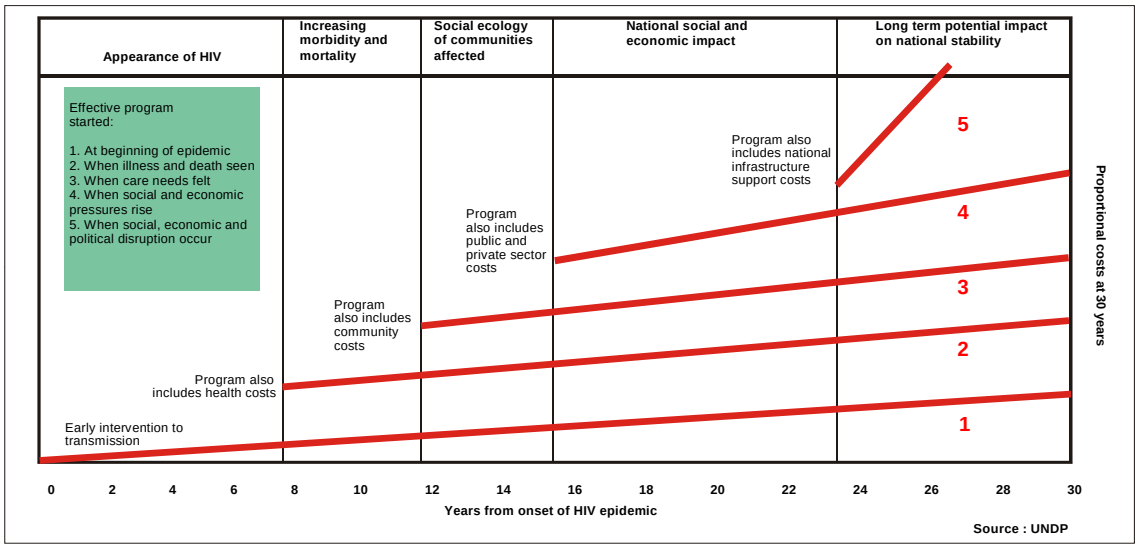

Figure 1: Proportional cost of delaying the start of an effective programme

Countries that have proved most successful in combating AIDS are those, such as Uganda, that have broken through the wall of denial at an early stage, and made a central commitment to mobilising society. Denial is the most dangerous 'side effect' of the HIV pandemic because it paralyses communities and prevents them from fighting back.

4. Linkages between HIV/AIDS and water, sanitation and hygiene: different perspectives

There are a number of linkages between HIV/AIDS and water, sanitation and hygiene associated with different perspectives. In the water sector these perspectives are used to advocate for a more holistic approach to basic water and sanitation services and to increase funding. The same applies for HIV/AIDS and an understanding of these linkages and perspectives will assist in the development of integrated approaches.

4.1 The consumer perspective

Good access to safe water and sanitation is indispensable for people living with HIV/AIDS and for the provision of home-based care to AIDS patients. Water is needed for bathing patients and washing soiled clothing and linen. Safe drinking water is necessary for taking medicines. Nearby latrines are necessary for weak patients. Finally, water is needed to keep the house environment and latrine clean in order to reduce the risk of opportunistic infections. Water and sanitation provision increases the sense of dignity of both patients and caregivers.

Public health systems in many high prevalence countries can no longer cope with the increased demand for health services. This reality, together with cultural preferences, contributes to the majority of AIDS patients being cared for within their local communities. The following powerful speech by the director of the South African National Association of People living with AIDS (NAPWA), Nkululeko Nxesi, is an advocacy for better water and sanitation services. It was presented at a national sanitation workshop convened by the South African NGO, Mvula Trust, in August 2002 and has been slightly shortened.

> ***HIV / AIDS, water and sanitation – why basic services matter***
>
> *NAPWA is a National Association of People living With HIV/AIDS. Our core business is to mobilise and facilitate care and support to people infected and affected with HIV/AIDS. We provide capacity building to PWAs through different programs. Through different projects and programs like de-stigmatisation and disclosure and campaigns, we do HIV/AIDS awareness activities.*
>
> *Is there a link between HIV/AIDS, water and sanitation? Does the delivery of basic services, including water and sanitation, matter in fighting HIV/AIDS? NAPWA's answer to these questions is a big yes. Our analysis is that HIV/AIDS is not just a medical and health but a socio-economic development issue. We will be failing if we take a very narrow approach in fighting the impact and spread of HIV/AIDS.*
>
> *What is a narrow approach? According to NAPWA, it is to only concentrate on HIV/AIDS awareness campaigns and on calls for the provision of anti-retrovirals. We need to quickly acknowledge and move to address HIV/AIDS in a very broad and holistic manner.*
>
> *What is a holistic approach? According to NAPWA it is to address the socio-economic development imbalances that exist amongst the South and North poles, the gross under- development of the third world countries and poor living conditions of the South African townships and rural areas with their populations. A holistic approach is to invest in the development of proper, effective and efficient health care system. It is to educate our youth in life skills so that they can take control of their health and sexual rights. It is to create jobs for the jobless. It is to recreate family structures as core for any society. It is to do with the social fiber*

regeneration of our society and its people. It is to provide treatment including basic and Antiretroviral (when necessary) care and support and so on.

Most importantly, a holistic approach in fighting HIV/AIDS is to ensure that our people have access to basic and proper living conditions. If people do not have access to basic nutrition, and proper health care services, they will be vulnerable to life threatening diseases including HIV/AIDS. HIV/AIDS thrives in poverty stricken conditions and environments.

Access to clean water and proper sanitation is one of the yardsticks to measure the level of access to basic living conditions. It is under this background that we as NAPWA see a close link between HIV/AIDS, water and sanitation.

If there is no access to enough clean water and proper sanitation facilities, people and communities infected and affected become more vulnerable to HIV/AIDS. Let me try to explain this more.

Water and sanitation is key in ensuring that one is healthy. You cannot cook with nor drink unsafe water because of the risks of being infected with diseases. Opportunistic infections like diarrhoea are also caused by lack of clean water and proper sanitation. Ensuring that people living with HIV/AIDS have access to clean water and sanitation reduces the risk of developing diarrhoea and cholera. Many people living with HIV/AIDS have died because of these diseases. Provision of clean water and sanitation becomes one of the strategies to manage opportunistic infections.

The cycle of the epidemic is at a stage where many people are falling sick. Through home based and palliative care, people are looked and cared for. One of the important ingredients of care is water. Access to water within the family will ensure that members of the family do not struggle to get water for care. Affected families need water to do laundry for the sick. Without access to water this service will be difficult to implement.

When people are approaching or are at a terminal stage it means that they will frequent toilets to relieve themselves. Access to sanitation facilities like toilets becomes important. People must not have to travel any distance to access a toilet. A sick person cannot afford to do that, as this will drain him or her. Lack of access of clean water and sanitation is the loss of one's dignity. Those people without toilets go to bushes or open places to relieve themselves. This is unacceptable and violates one's human rights and dignity.

Having no proper sanitation means that there is a vicious cycle of poverty, diseases and bad hygiene. Decomposing human waste in an open space means that people are more vulnerable to catch diseases. People living with HIV/AIDS need to stay in a very healthy and hygienic environment, free from harmful bacteria and germs.

One of the important interventions in fighting HIV/AIDS is the protection of human rights of PWA's. Clean water and sanitation is one of these human rights. It is clearly stated in the South African constitution and DWAF's water and sanitation strategy documents and policies that every citizen of this country has a right to access 25 liters of water a day and a toilet. Lack of access to clean water and sanitation is a violation of health rights of people living with HIV/AIDS.

Lack of access to clean water and sanitation means that the immune system of an HIV positive person will be compromised. Everyone regardless of their HIV positive status needs water. But for a person who is HIV positive clean water and sanitation becomes more important.

Today people talk of treatment for HIV positive people. Part of this treatment is in a pill form. One needs water to take this treatment. Taking treatment without clean and healthy water can be counter productive to the intended good and noble reasons of taking treatment.

People, particularly scientists, have argued that in the first world countries treatment - anti-retroviral drugs - is working. One of the reasons is that they have

access to a high level of clean water and proper sanitation. While many people in the poor communities are struggling to get even five litres of water a day, communities in the first world countries and rich South African citizens enjoy mineral water - which is healthy, but expensive. This is why we believe that it is possible and necessary for the government to ensure that every one in this country has access to clean water and sanitation.

As NAPWA we therefore call for the government to speed up the process of providing water and sanitation to the people on the ground. It is against this background that we applaud the Mvula Trust for its tireless efforts to build water and sanitation schemes in our communities. However there has to be a vigorous, and radical bias towards our rural population. This is where the scourge and impact of the epidemic is felt.

More important is the issue of developing capacity in our people. We therefore urge the government that its water and sanitation implementation approach involves communities in project planning, implementation, monitoring and evaluation. This will not only provide our people with clean water and sanitation, but also with dignity and a sense of living and ownership of these basic but fundamental services. People living with HIV/AIDS should also be involved in all these processes.

Lastly, one practical suggestion about a partnership between Mvula Trust and NAPWA is to integrate HIV/AIDS awareness activities into your community programs. As people think through water and sanitation issues, as people are busy building water schemes, they must be thinking about HIV/AIDS. But most importantly we need to educate people living with HIV/AIDS about the importance of taking clean water and having proper sanitation services. This is one of NAPWA's key advocacy issues.

Thank you.

4.2 The health perspective

The main objective of the water supply sector has always been to improve people's health by providing access to safe water supply and sanitation. With HIV/AIDS, this becomes even more urgent because diarrhoea and skin diseases are among the most common opportunistic infections. For some patients, diarrhoea can become chronic, weakening them even more. In order for HIV infected people to remain healthy as long as possible and for people with AIDS to reduce their chances of getting diarrhoea and skin diseases, adequate water supply and sanitary facilities are of the utmost importance. Clean water is also needed to take medicines.

Hygiene promotion and education

It is now widely accepted in the water and sanitation sector that availability of safe water and sanitation do not automatically lead to improvements in health, but that hygiene promotion and appropriate hygiene behaviours are required as well. Only improved water handling and sanitation practices, personal hygiene, domestic hygiene, food hygiene and safe waste water disposal and drainage will effectively reduce water and sanitation related diseases. For People Living With HIV/AIDS (PLWHA – this includes households/family members of HIV positive people) this is even more important. Therefore, hygiene education must be specifically targeted at caregivers and volunteers involved in home-based care and must be one of the elements in training for home-based care. Currently, this is rarely done.

Access to water and latrines

Water supply points and latrines have to be accessible close to where they are needed. This not only reduces the burden of distance – for example, fetching water by care-givers or those who are weak - but also reduces the risk of girls and women being raped while fetching water or relieving themselves in remote places, and thus reduces vulnerability to infection with HIV. In addition, the design of water systems needs to take into account that those fetching water may be children or older people who have particular requirements (pump handles not too high, pumping not too heavy, the walls of the well not too high etc.) This is especially relevant where these tasks fall increasingly to children and the elderly as a consequence of AIDS.

Infant feeding

Clean water is crucial for infant feeding. If a mother is HIV positive, there is a one in three risk that she may transmit the virus to her baby through breastmilk, even if the child was born HIV negative. The 'obvious' solution would be to not breastfeed the child, but this has proven to be very difficult because of social, cultural and economic reasons, including the cost and availability of powdered milk, stigma and tradition. Moreover, the chance of a child dying from diarrhoea rises when formula feeds are not prepared with clean water, or when cleaning and water handling practices are not hygienic. There is an ongoing discussion about this [5].

Burial sites

Where there have been a high number of deaths from AIDS, there is increasing pressure on burial sites, and this may lead people to be buried where decaying material could contaminate groundwater sources. There is no extra risk because someone dies of AIDS, but a need for all burial sites to be safely sited. This should be addressed during hygiene promotion.

Incorrect health beliefs

There are a large number of incorrect health beliefs that contribute to further stigmatisation of people living with HIV/AIDS. Examples of such misconceptions are:

- People can become infected with HIV/AIDS due to groundwater pollution near burial sites (Engelbrecht (1998); Ashton and Ramasar (2001) or by washing of sanitary napkins (Molefe and Appleton 2001).
- People (playing children) can become HIV infected through poor waste disposal practices: condoms and sanitary napkins. (Molefe and Appleton 2001).

The HIV virus is very fragile and cannot be spread in this way. However, a discussion on such beliefs should be encouraged during hygiene promotion activities. Ignoring these beliefs will not diminish their existence and hence will not reduce stigma and discrimination.

4.3 The human rights perspective

The issue of stigma leads us to the fact that HIV/AIDS is essentially a human rights issue [6] because:

5. http://www.unicef.org/aids/mother.htm
6. http://www.ids.ac.uk/bridge/reports/CEP-HIV-report.pdf

- Lack of access to prevention methods, appropriate information and materials, treatment and care, leading to vulnerability to HIV, is linked with human rights violations such as poverty, inequality, racism and sexism.
- People Living With HIV/AIDS (PLWHA) are often unable to live a life of quality, dignity and freedom as their rights may be violated on the basis of their HIV status [7].

UNAIDS and its eight co-sponsoring organisations United Nations Children's Fund (UNICEF [8]), the United Nations Development Programme (UNDP [9]), the United Nations Population Fund (UNFPA [10]), the United Nations Education, Scientific and Cultural Organization (UNESCO [11]), the World Health Organization (WHO [12]), the United Nations International Drug Control Programme (UNDCP [13]), the International Labor Organization (ILO [14]) and the World Bank [15] are entrenching human rights principles in HIV/AIDS prevention, treatment, care and support (rights, ethics and law [16]).

Similarly, a human rights perspective has been introduced in the water and sanitation sector. Access to safe water and sanitation is considered not only a basic need but also a human right. The Water Supply and Sanitation Collaborative Council through Vision 21[17] advocates a holistic approach, whereby hygiene, water and sanitation are acknowledged as a human right, related to human development, the elimination of poverty, environmental sustainability and the integrated management of water resources.

At the Johannesburg World Summit for Sustainable Development, delegates of the "The Civil Society Action Programme on Water" launched a statement saying that secure access to sufficient safe water and sanitation to meet basic human needs, including water for small-scale productive use to support livelihoods strategies, must be considered a human right [18].

Accepting access to water and sanitation as a human right has important policy and programming implications, especially in countries with a high HIV/AIDS prevalence, because it requires more effort and funding to ensure total coverage.

Another human rights issue is the stigmatisation of infected people and their caregivers. Infected people and their families can become excluded from community-based water decision-making. Extra effort is therefore needed to ensure that the voices of people living with HIV/AIDS are heard, either directly or indirectly by representation (see section 7). This also has implications for the way people in water and sanitation agencies work. This issue is discussed in section 5. Actively involving people affected

7. http://www.who.int/mediacentre/releases/pr91/en/
8. http://www.unicef.org
9. http://www.undp.org
10. http://www.unfpa.org
11. http://www.unesco.org
12. http://www. who.int/en
13. http://www. odccp.org/odccp/index.ht
14. http://www.ilo.org
15. http://www.worldbank.org
16. http://www.unaids.org/whatsnew/press/eng/pressarc02/Humanrights_100902.html
17. http://www.wsscc.org/load.cfm?edit_id=45
18. http://www.irc.nl/source/item.php?id=741

by HIV/AIDS has proven to be also an effective strategy to tackle taboos around the disease and to create more openness. People living with HIV/AIDS can also be employed very effectively in water and sanitation improvement programmes, particularly as peer educators – with the added benefits of breaking down prejudices and providing income generation opportunities.

4.4 The gender perspective

Unequal power relations between men and women are a major factor contributing to the spread of HIV / AIDS. Sex is not always consensual, and women and girls are often not able to persuade their sexual partner to use a condom. This has to do with trust and the taboo on talking about sexual matters, especially within the context of a long-term relationship. Women's anatomy, and some cultural practices, (e.g. infibulation and dry sex) makes them more susceptible than men to infection by the virus. In some African countries, five times more women than men in the age group 15-24 are infected. Detailed information on gender and AIDS can be found at http://www.unaids.org/gender.

> *In an article in the **New York Times**, Mr Mocumbi, Mozambique's former Minister of Health, a physician and a Board member of the International Women's Health Coalition, made the point that AIDS is spreading rapidly among heterosexuals because of gender inequality:*
>
> *In Mozambique the overall rate of HIV infection among girls and young women, 15 percent, is twice that of boys their age, not because the girls are promiscuous, but because nearly three out of five are married by age 18, 40 percent of them to much older, sexually experienced men who may expose their wives to HIV and sexually transmitted diseases […]. Abstinence is not an option for these child brides. Those who try to negotiate condom use commonly face violence or rejection. […] As a father, I fear for the lives of my own children and their teenage friends. Though they have secure families, education, and information and support the need to avoid risky sex, too few of their peers do. As Prime Minister, I am horrified that we stand to lose most of a generation, maybe two. The United Nations estimate that 37 percent of 16-year-olds in my country will die of AIDS before they are 30. […] We must summon the courage to talk frankly and constructively about sexuality. We must recognise the pressures on our children to have sex that is neither safe nor loving. We must provide them with information, communications skills, and, yes, condoms. To change fundamentally how girls and boys learn to relate to each other and how men treat girls and women is slow, painstaking work. But surely our children's lives are worth the effort' (Mocumbi 2001 from Tallis 2002 [19])*

There is a gender imbalance in the social, economic and political impacts of the HIV/AIDS epidemic. Women are affected disproportionately because of their socially defined roles. Everywhere, women are bearing the main burden of AIDS care. They take care of family members, across generations, beyond their own children, partners, parents and friends. This has profound emotional, physical and other implications. One consequence is 'time poverty', whereby water collection and other reproductive tasks become increasingly burdensome, and reduce time available for other activities. This is particularly significant when women themselves suffer from bad health, whether related to AIDS or not.

19. http://www.ids.ac.uk/bridge/reports/CEP-HIV-reportw2.doc

School enrolment rates for girls tend to decrease in communities with high prevalence rates, as girls are required to take on a wider range of household and domestic responsibilities. This in turn decreases access to information, knowledge and income generating opportunities, which can in turn increase susceptibility to infection.

The UNAIDS web site [20] gives a Resource Packet on Gender and AIDS. This set of tools illustrates the role that gender plays in the global HIV/AIDS pandemic. The packet contains three separate components:

- The **Gender and AIDS almanac**, which offers a gender-focused overview of important topics related to the prevention, transmission and care of HIV/AIDS,
- Seven **Gender and AIDS fact sheets** which present and illustrate key points from the almanac,
- Six **Gender and AIDS modules**, that provide practical guidelines to field practitioners on various aspects of conducting gender-sensitive HIV/AIDS work.

Water supply and sanitation can assist men and women to cope better with the effects of HIV/AIDS. By improving access to water supply and sanitation, some of women's practical needs are met. Providing water for productive use can also be important strategically as it can strengthen their options for sustainable livelihoods (see section 4.5). Ensuring gender-balanced decision-making can lead to 'empowerment' that might contribute to more balanced gender relations.

4.5 The community-driven development perspective

Community-driven approach in the water and sanitation sector

The community-driven development perspective that has been applied within the water and sanitation sector for the last 20 years is particularly relevant in a context of HIV/AIDS. This approach puts communities in the driver's seat, and requires government institutions to be demand-responsive, to build capacities (especially problem solving skills) and to create an enabling environment by providing technical support, formation of partnerships and supportive policy frameworks.

Community HIV/AIDS competence

Experience in the water and sanitation sector has shown that there is a relationship between the level of community organisation, empowerment and autonomy and the level of sustainability of water and sanitation interventions. Important factors here include measures that promote gender equality, greater socio-economic equity, community cohesion, stable traditional leadership and respect for ethnic differences.

As can be expected, these same factors also define the ability of communities to cope with the impact of HIV/AIDS and to prevent new infections. Communities with a high HIV/AIDS prevalence are often characterised by unemployment or limited income generating opportunities, high mobility, labour migration, ethnic strife, social inequalities and a weakening economic basis - they also lack capacity to decrease the environment of risk. What in the water sector is termed 'community management' can be compared to what is called 'community HIV/AIDS competence' [21]. In what is described as an HIV/AIDS competent society, individuals, families and the community as a whole have accepted the reality of HIV/AIDS. They assess how this affects the

20. http://www.unaids.org/gender
21. http://www.unaids.org/publications/documents/responses/index.html#community

different aspects of their life and take concrete measures to minimise its impact: they have adapted to living positively with AIDS.

Strong community-based organisations that are dedicated to social equity, essential social service provision (e.g. water supply) and community health promotion are the main pillars of HIV competence. They increase social cohesion and thereby reduce a population's vulnerability to HIV. Community competence is a collective and not an individual attribute. However, the effects of increased community HIV competence are felt at the level of individuals: the results of greater competence are less HIV transmission, less isolation and stigmatisation, and more care and support for people in need. Community competence is also defined by the partnerships that are forged by institutions surrounding the community, the public sector, the private sector and the NGOs, and the way they work together.

Approaches for prevention

Activities to promote community-based prevention of HIV infection and hygiene promotion make use of similar methods. In both domains, the dominant approach to behaviour change whether for prevention of HIV transmission or transmission of water and sanitation related diseases, has focused on awareness raising and education for individual behaviour change, with an emphasis on sending messages (one-way communication). Although this usually has resulted in higher levels of knowledge, it has not lead to significant or lasting changes in behaviour.

The community competence approach changes the emphasis from providing messages to building community capacities to assess risks and barriers to prevention and to develop solutions and action plans. This is also at the core of new approaches developed in the water sector for building community capacities to manage water supplies sustainably and to improve hygiene behaviour.

4.6 The poverty alleviation perspective

HIV/AIDS and poverty

HIV/AIDS is one of the biggest obstacles for reaching global poverty reduction targets and development goals, see the HIV/AIDS Implications for poverty reduction paper from the UNDP [22] and the AIDS Poverty Reduction and Dept Relief Toolkit from UNAIDS [23].

Figure 2 shows that poverty increases vulnerability to HIV infection, and AIDS exacerbates poverty. Conditions related to poverty such as unemployment, low sense of self-worth and a sense of fatalism have been demonstrated empirically as being enormously significant in vulnerability to HIV infection. Similarly, poor access to basic services such as education, health care and water and sanitation, that are indicators for poverty, also increase vulnerability to HIV infection.

Different impact for rich and poor

Although HIV/AIDS affects both rich and poor, the impact is different. Richer households are likely to shift their budget allocations, but this may be temporary. Poor households often adopt coping strategies that are irreversible and will affect the survival

22. http://www.undp.org/dpa/frontpagearchive/2001/june/22june01/hiv-aids.pdf
23. http://www.unaids.org/publications/documents/economics/agriculture/JC536-Toolkit-E.pdf

of the household members left behind (e.g. sale of productive assets). In addition, some coping strategies - such as migration - may increase their risk of infection. Finally, poverty increases female vulnerability to infection, as selling sex may be the only way to survive with their children.

Several of the poorest countries, such as Ethiopia, Mozambique, Tanzania, Uganda and Zambia, have not only a low coverage of safe water supply and sanitation but also a high HIV/AIDS prevalence. Increasing financial constraints will affect the provision of water and sanitation. They therefore need support from the international community to develop integrated strategies to alleviate poverty and mitigate the impact of HIV/AIDS, including provision of basic services.

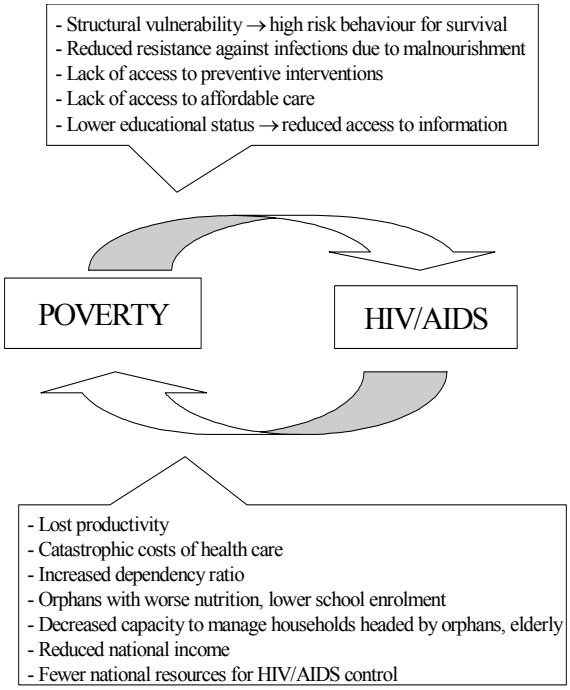

Figure 2: Relationship between HIV/AIDS and Poverty

Adapted from: AIDS, poverty reduction and debt relief – A toolkit [24] for mainstreaming HIV/AIDS programmes into Development Instruments, UNAIDS Best Practices Collection – key material, UNAIDS/World Bank, March 2001.

Water is not only a basic need but also has strategic importance for poor people and especially those infected or affected by HIV/AIDS. Adequate water supply saves labour and energy; contributes to diversification of income; generates nutritional value; reduces expenditure on health etc. It thus has implications for sustainable livelihoods.

Sustainable Livelihoods Approach

In order to understand the impact of HIV/AIDS in a specific context along with other factors affecting livelihoods and poverty, the "Sustainable Livelihoods Approach" (SLA) can be utilised. In the SLA good health and safe water are considered as "assets" and thus closely inter-linked. Water is valued for its multiple functions and strategic

24 http://www.unaids.org/publications/documents/economics/agriculture/JC536-Toolkit-E.pdf

importance, both for the household as a whole and the individual. In Sub-Saharan Africa the following HIV/AIDS household coping strategies have been identified from an SLA perspective:

- Strategies aimed at improving food security
- Strategies aimed at raising, supplementing and diversifying income in order to maintain household expenditure
- Strategies aimed at alleviating the loss of labour (White and Robinson 2000).

Clearly, improving water supply can contribute to all three strategies (compare Nicol 2000 [25] and UNDP activities to support UN special session on HIV/AIDS [26]).

Poverty Reduction Strategy Papers

Poverty Reduction Strategy Papers (PRSP), written by countries to become eligible for external financial support, are currently guiding poverty alleviation interventions and serve as the country's agenda for poverty reduction. They are supposed to be developed in dialogue between government, the private sector and civil society organisations. In practice, participation tends to be limited and the poorest and most marginal groups are usually inadequately targeted.

A recent review of 21 African PRSPs showed that:

- Analyses are generally weak;
- Only 33% highlight HIV/AIDS as a cause of poverty;
- 48% limit HIV/AIDS to a health problem;
- 19% make no reference to HIV/AIDS in poverty analyses;
- Where HIV/AIDS is identified as a development problem, the issue is not discussed in any detail.

From: UNAIDS/World Bank: AIDS, poverty reduction and debt relief, March 2001 [27].

Integrating HIV/AIDS into Poverty Reduction Strategies helps to create the necessary policy and planning framework to develop a comprehensive, multi-sectoral and adequately funded response to the epidemic. The impact of HIV/AIDS, both on basic service delivery organisations and on the receiving communities, can then also be addressed more effectively [28]. Generally, water policies that are made "pro-poor" will help to mitigate the effects of the epidemic.

See for more information on poverty and HIV/AIDS:

- Loewenson, R. and Whiteside, A. (2001) [29]
- Bjorkman, H. (2002) [30]
- Cohen, D. (2002) [31]

25. http://www.livelihoods.org/cgi-bin/dbtcgi.exe
26. http://www.undp.org/dpa/frontpagearchive/2001/june/22june01/hiv-aids.pdf
27. http://www.unaids.org/publications/documents/economics/agriculture/JC536-Toolkit-E.pdf
28. http://www.undp.org/hiv/docs/HIVPRS.doc
29. http://www.undp.org/dpa/frontpagearchive/2001/june/22june01/hiv-aids.pdf and http://www.unaids.org/publications/documents/economics/agriculture/JC536-Toolkit-E.pdf
30. http://www.undp.org/hiv/docs/HIVPRS.doc
31. http://www.undp.org/hiv/publications/issues/english/issue27e.html

4.7 Conclusion

The above shows that no matter from which perspective you look at the linkages between water and sanitation and HIV/AIDS, they are very important and need to be taken into account. Safe water and sanitation are a basic need and a human right and this applies even more to people affected by HIV/AIDS as it will help to sustain them in good health for longer, will facilitate care for ill patients and will increase their dignity. This implies a need for hygiene education to be integrated in the training given to home care volunteers in order to ensure safe water handling practices.

Because most caregivers are women, the need for their involvement in all stages of planning and implementation of service provision, is more necessary than ever. Because often very young and very old women take over much of the water and sanitation related tasks, both hygiene education and technology selection may have to be adapted to suit their requirements.

Community-based approaches that are already accepted as the best way to ensure an equitable and sustainable water service, can at the same time function as an entrance to promote community–based prevention and mitigation activities. The principles are the same, the issue at hand more sensitive. It requires well-trained, motivated and non-stigmatising facilitators.

A poverty alleviation framework can ensure that the socio-economic and equity aspects that play a role in water, sanitation and HIV/AIDS are addressed. It can also ensure that these issues are incorporated in the policy instruments, such as PRSPs, that guide the strategies for poverty alleviation of many countries.

5. Impact of HIV/AIDS on water and sanitation organisations and service provision

Government agencies in countries with a high HIV/AIDS prevalence face increasing difficulties in addressing their mandate and in responding to the challenges posed by HIV/AIDS. These difficulties are partly caused by staff infection rates that can be as high as 30% in some high prevalence countries. The implications in terms of human resources, skills, training, health insurance and benefits are enormous, let alone the emotional burden. Yet, due to the stigma associated with HIV/AIDS, only very few organisations (public, private and NGOs) have developed an internal HIV/AIDS policy and created an atmosphere that facilitates prevention and action to mitigate impact. The commercial sector has been quicker to develop such policies as it recognises the internal cost-benefits. Generally, organisations find it far easier to focus on the impact of HIV/AIDS on their services than on their staff, as this does not require sensitive internal analysis. However, it is doubtful if measures taken to reduce 'external' impact on service provision will have the desired effect if the internal impacts are not addressed at the same time.

A very useful toolkit for impact assessment has been developed by two South African bodies, ABT Associates Inc., South Africa, and the Health Economics and HIV/AIDS Research Division of the University of Natal. This toolkit targets government ministries and departments, but can also be used by other organisations. The aim is to assist priority sectors to identify areas where they are vulnerable to the impact of HIV/AIDS and to suggest specific steps that can be taken. The toolkit has a generic section covering:

- Understanding of HIV/AIDS,
- Why HIV/AIDS is a government issue,
- HIV/AIDS and Ministry employees,
- Planning tools.

In addition there are tools for specific departments/sectors [32]. Although there is no special tool for the water sector, generic planning tools can easily be adapted to deal with special requirements for HIV/AIDS in the water sector.

5.1 Internal organisational impact

The loss of human resources puts the provision of essential services such as education, health, agricultural extension, water supply and sanitation, at risk. All water and sanitation organisations are likely to be affected: governmental agencies (water departments; local government), civil society (NGOs) and private sector (water companies). An internal analysis covers an assessment of the impact of HIV/AIDS on agency staff and the implications of this for the management and planning of the organisation.

The objective of the internal assessment is basically to develop 'an AIDS competent organisation' because the working environment has influence on people's social attitude and values and binds people by forming a shared identity. Openness at work will lead to more openness at home and will positively influence social interaction and peer group pressure. Existing committees in the organisation can be mobilised in support of

32. http://www.und.ac.za/und/heard/

HIV/AIDS internal programmes, if given a clear mandate to do so and if backed by the management.

Identifying internal impacts involves understanding the extent and consequences of infections among staff. Several key areas will need to be looked at:

- **Staff infections** including prevalence – (based on estimates available in the country), future rates of infection – (based on national projections), differences in susceptibility among staff (in terms of gender, age, wealth, education) and knowledge, attitudes and practices towards prevention and treatment.
- **Staff morale** including the personal impact on staff, the number of families affected, co-workers affected, the extent to which impact of HIV/AIDS is discussed at work, the degree to which it leads to stress, or overwork, openness about HIV status, degree of support from the organisation to those affected.
- **Staff working environment profiles**, including the mobility of staff, the number of nights away in the field and postings away from families, all of which may increase susceptibility to infection.
- **Sick family members** and the extent this leads to stress, poor morale, time off work, financial pressures etc.
- **Gender issues** such as whether assessment and intervention strategies are sensitive to the different needs and responses of men and women; and what factors affect women staff to protect themselves from infection.
- **Absenteeism and productivity**, including present and projected sick leave, compassionate leave and leave for funerals and the implications for productivity. Organisations should look at the degree of flexibility in allocating substitute staff; and the key areas that are vulnerable to stoppages or bottlenecks, because key personnel or activities have been affected.
- **Recruitment and training**, including trends in staff turnover, recruitment and training costs, procedures designed to deal with pressures created by HIV/AIDS and planning and monitoring of ongoing skills requirements.
- **Benefits**, including a review of the expected impact on future claim levels and costs for items like medical insurance, sick and compassionate leave, death and disability cover, funeral benefits and early retirement.
- **Existing organisational response**, including whether there is an HIV/AIDS policy that is followed and addressed by managers; services available to support affected and infected staff; and committees, teams or focal points responsible for HIV/AIDS, that are trained and have a budget.

> *One study in Malawi comparing several Ministries showed that Water Department staff had the highest HIV infection rate. High mobility of agricultural extension staff was identified as a particular risk factor and this might be applicable for the Water Department as well. (…)* Cohen, D. (2002). Human Capital and the HIV epidemic in sub-Saharan Africa.

Because HIV/AIDS is such an important workplace issue, the ILO has developed a Code of Practice. The code contains fundamental principles for policy development and practical guidelines from which concrete responses can be developed in the following key areas:

- Prevention of HIV/AIDS,
- Management and mitigation of the impact of HIV/AIDS on the world of work,
- Care and support of workers infected and affected by HIV/AIDS,

- Elimination of stigma and discrimination on the basis of real or perceived HIV status.

The key principles of the Code of Practice [33] and information on the issue of stigma and discrimination can be found here [34].

A workplace policy should be established with the following guiding principles:
- Staff representation and, where possible, involvement of People Living with HIV/AIDS in the development of the policy,
- Communication of the policy to all staff,
- Continuous review and update in light of changes taking place,
- Monitoring on implementation,
- Evaluation of impact.

The task of an organisation is also to promote prevention. By doing this effectively, staff are enabled to mobilise and motivate their social environment for prevention. Approaches to prevention include:
- HIV prevention education and information,
- Peer education programmes,
- Condom distribution and availability,
- Access to treatment of STDs,
- Adjustment of working conditions to reduce susceptibility,
- Enhancement of women's capacity to negotiate for safer sex,
- Promotion of zero tolerance of sexual harassment within the organisation, with disciplinary measures for offenders.

The toolkit mentioned above provides guidelines on how to address these issues. For all activities to be effective, commitment at the highest level of the organisation is a critical requirement. If this is missing, the effort will fail, as can be seen in organisations where HIV/AIDS focal points are established without sufficient authority or capacity and where the work is just an add-on to the existing workload, without any training for this task.

5.2 Impact on service provision

The external assessment looks at HIV/AIDS impacts on programmes carried out by the organisation (changed needs and demands) and on the possible contribution of those programmes to the spread of HIV/AIDS. Very little documentation is available on the external impact and only two references were found that deal particularly with HIV/AIDS and the water sector:
- Ashton, P. and Ramasar, V. (2001) Water and HIV/AIDS: some strategic considerations in Southern Africa, Pretoria.
- Ondari, J. and Lidonde, R. (2001),The impact of HIV/AIDS on Water and Sanitation Services Delivery, Paper presented at 13th Regional Water and Sanitation Seminar on "Hygiene, Sanitation, Water and HIV/AIDS-Emerging Issues, Nairobi [35].

33. http://www.ilo.org/public/english/protection/trav/aids/code/keyprinciples_page.htm
34. http://www.unaids.org/publications/documents/human/index.html#ethics
35. http://www.netwasgroup.com/NetworkingInfo/WSUpdate7.htm

Both documents point out the problem of increasing service delivery costs and the tariff adjustments that water companies are expected to make. They also mention the need to develop, test and implement robust and reliable water treatment processes that do not require constant supervision or management. This would help to reduce the potential health risks associated with ineffective water treatment that can be expected as a result of increased mortality of operators of water treatment works.

Other issues that are likely to affect service delivery are:
- loss of skilled staff leading to delays and reduced quality of planning and construction of WS systems,
- decrease in staff, resulting in lower construction capacity,
- decrease in staff, resulting in reduced technical support for operation and maintenance and quality monitoring,
- decrease in staff, resulting in reduced capacity to carry out hygiene education (decrease in water sector staff or staff of the Ministry of Health that is even more overburdened by the epidemic),
- reduced budget, which may affect provision of new systems and financing of community capacity building and hygiene promotion activities,
- declining ability among end-uses to contribute to the capital or operating costs of installations,
- reduced morale possibly resulting in delivery of less and lower quality services,
- possible stigmatisation in target communities of staff known to be HIV positive, which may compromise their effectiveness.

The response of water and sanitation organisations to the HIV/AIDS epidemic has so far been limited. No examples have been found in the water and sanitation sector of systematic ways of addressing the impact on programmes and service delivery, or assessing the impact of the programmes on the spread of HIV/AIDS.

Compared to the water and sanitation sector, the Agricultural, Educational and Transport sectors have well documented the costs and other implications of HIV/AIDS relating programmes, outputs and goals. Useful publications are:
- Topouzis, D. (2001), Addressing the impact of HIV/AIDS on Ministries of Agriculture: focus on Eastern and Southern Africa, Discussion Paper [36].
- Cohen, D. (2002), Human Capital and the HIV epidemic in sub-Saharan Africa, [37] Working Paper 2, ILO Programme on HIV/AIDS and the World of Work, Geneva

5.3 Conclusion

There is much documentation and guidance for mainstreaming HIV/AIDS into internal operations of sector organisations. This shows the importance of developing internal policies and strategies as, ultimately, all organisations in countries with a medium to high prevalence will be affected. Although funds are needed to carry out assessments and to develop policies and strategies, these are not large and can lead to reduced costs at a later stage (for instance with recruitment and training): prevention is cheaper than mitigation. It is important for sector organisations to analyse why they have so far not addressed the internal impact: Of course the commitment of management is crucial, but the issue may well go beyond management and be rooted in stigma and fear.

36. http://www.unaids.org/bestpractice/digest/files/topouzisMoA2011.doc
37. http://www.ilo.org/public/english/protection/trav/aids/download/pdf/wp2_humancapital.pdf

With regard to external impacts, assessments so far point to the increasing cost of delivery and decreasing human resources. But they need to go further and really analyse what happens as a consequence of HIV/AIDS to the strategies that they have been promoting, such as demand responsive approaches that are based on willingness and ability to pay. The basic assumptions that underlie these strategies may no longer be valid and may have to be adjusted to the changed conditions.

6. Impact of HIV/AIDS on the sustainability of community-based water supply and sanitation systems

So far the water and sanitation sector has paid little or no attention to the actual and potential impact of HIV/AIDS on the financial, social and economic feasibility and sustainability of water supply and sanitation systems. This is remarkable, as increasing evidence exists, that the epidemic affects the entire structure and functioning of both rural and urban households and communities. Information on household and community responses to the HIV/AIDS epidemic can be found on the web site [38].

The following direct and/or indirect effects of HIV/AIDS on the sustainability of water and sanitation systems have been identified so far:

- **Reduced ability of water users to pay** water fees due to affected households losing their primary breadwinners, overall livelihood insecurity and increased medical expenditures. Expenditure on water has to compete with medical bills and school fees. This can result in people returning to unprotected water sources and the implementation of cost recovery policies being delayed. (Ashton and Ramasar 2001; Ondari and Lidonde 2001 [39]).
- **Reduced ability of water users to spend time and energy on management activities.** This means that the opportunity and transaction costs of community-based management are increasing.
- **Erosion of management capacities** due to loss of social capital (loss of knowledge and skills). Increased training costs due to higher turnover of trained community members due to AIDS-related deaths. (Ashton and Ramasar 2001; Ondari and Lidonde 2001). HIV/AIDS erodes the social capital of communities as a whole (White, J. and Robinson, E. (2000) [40],
- **Affected households may not be able to participate** in planning, decision-making and implementation and their specific needs may not be taken into account. They may face particular difficulties in paying for access to services, and may need cross-subsidisation. This is of particular concern where services are cut-off because tariffs are not paid, prompting a reversion to unsafe water sources.
- **Demand responsive approaches**, which require household contributions **may serve to exclude the most needy**, who may struggle to contribute labour or cash to the project implementation costs.
- **Child-headed households in particular form a group that is unlikely to have access** to participation and moreover, are unlikely to be aware of operation and maintenance requirements and safe water handling practices

> *A catchment management programme in South West Tanzania noticed that HIV/AIDS caused an under representation in decision-making of a) labour poor households; b) children/youth headed households and c) elderly women. These categories are never represented on committees (Franks, T. and Cleaver, F. (2002), People, livelihoods and decision-making in catchment management: a case study from Tanzania, in: Waterlines, vol. 20. no.3, 7-10)*

38. http://www.unaids.org/publications/documents/economics/agriculture/una99e39.pdf
39. http://www.internationalwaterlaw.org/Articles/hydropolitics_book.pdf
40. http://www.livelihoods.org/cgi-bin/dbtcgi.exe

Clearly, in countries with high or increasing HIV/AIDS prevalence, water sector planners and decision-makers at all levels need to assess, address and continuously monitor the current and expected impact of HIV/AIDS on the ability of communities to finance and manage water supply and sanitation. In a context of AIDS, it is imperative that all installations are robust, affordable and can be sustained without reliance on a declining pool of skilled outsiders. Village level operation and maintenance principles are now more important than ever.

7. Impact of HIV/AIDS on demand for water and sanitation services

HIV/AIDS affects the demand for accessible, reliable and affordable water and sanitation services in a variety of ways. This may have important planning and policy implications.

7.1 Demographic changes

Uncertainties surrounding forecasts of HIV/AIDS-related mortality and population growth rates can complicate the planning and implementation of water supply and sanitation systems. The general trend is that population growth rates and life expectancy are both plunging. Fewer children are being born (HIV reduces fertility) and more children die because they are born HIV positive. Life expectancy is reduced to a level achieved 20 years ago in some countries: the chance that a boy of 15 years of age will die of AIDS is in Kenya 50%, in Zambia 60%, in South Africa 70% and in Botswana almost 90% (UNAIDS, 2000). This situation causes demand for water supply and sanitation to decrease.

On the other hand, demand for services may increase as a result of an urban-rural migration flow, as infected people tend to return to their rural home area to die and orphans are sent to families in rural areas (Ashton and Ramasar 2001; UNAIDS (2002), White and Robinson 2000). There may also be a flow towards urban centres as people move in search of employment opportunities in towns.

The composition of the water user population is changing. Particularly in rural areas, water users are increasingly sick, elderly, widowed or orphaned – with a small but growing number of child-headed households.

7.2 Increased need for water supply and sanitation services

Due to the HIV/AIDS epidemic, people's need for clean and sufficient water and sanitation has become even more acute (see the speech by the South African National Association for People living with AIDS in section 4.1).
Demand is increasing for both water and sanitation, yet individual, household and community capacity to contribute labour, to finance and to manage improved water and sanitation services (so called 'effective demand') is decreasing (see 4.1 and 6).

An increase in demand for water is also caused by the need for water for productive use. People who are weakened by AIDS can still be involved in growing of vegetables in kitchen gardens, provided that they do not need to haul water from far away. The same applies to tending of domestic animals and home based businesses, such as beer brewing.

7.3 Conclusion

In countries with high or increasing HIV/AIDS prevalence, it is necessary to incorporate the demographic effects of the epidemic into the planning and design of water systems. Demand will need to be monitored regularly as changes may be rapid, fairly unpredictable and very location specific.

The need for improved basic services is most urgent in urban and rural communities affected by HIV/AIDS. Current demand responsive approaches and policies that promote full cost recovery and private sector involvement have an inherent risk of further marginalising these communities (households and individuals) and jeopardising their access to improved water supply and sanitation. Continued monitoring of equity and poverty indicators is required, as well as management approaches and strategies that are equitable, gender-sensitive and pro-poor.

8. What have we have learned?

This section gives an overview of the most important lessons learned in preventing and mitigating the effects of HIV/AIDS, both outside and inside the water and sanitation sector. It forms the basis for the next chapter where suggestions are made how the water and sanitation sector can be more effective in addressing the problem of HIV/AIDS.

8.1 National leadership and political commitment is crucial at all levels

Political commitment at the highest level is crucial for effective prevention and impact mitigation of HIV/AIDS. Lingering denial among both social and political leaders in some countries provides the epidemic with an ideal environment in which to spread. Commitment reduces stigma and discrimination and facilitates a multi-sectoral approach in partnership with civil society and the private sector.

Although much has been learned on effective responses, countries are slow to act and to invest in early prevention programmes and have not been able to scale-up successful interventions. Governments must take the lead in this. The decrease in Uganda in HIV/AIDS prevalence from 23% to below 10% at present has been ascribed to the leadership of President Museveni, who has declared the fight against AIDS the highest government priority. The same is true for Thailand and Senegal where the large scale spread of the virus was contained by the commitment and action of the government. There are other countries where such commitment has proven to be effective, but of course there are also examples of countries where the leadership does not speak out or where messages are confusing, as in South Africa. For the prevention of rapid spread, early commitment is a must, coupled with sustained, interactive and localised campaigns. Local government has a key role to play here.

8.2 HIV/AIDS is a development problem that requires a multi-sectoral approach

It is now widely acknowledged that HIV/AIDS is not only a problem to be addressed by the health sector, but a development problem that has implications for all public services and all private enterprises. Thus, HIV/AIDS can and should not be tackled by the Health sector alone. The water sector, like other sectors, has to address the implications of HIV/AIDS in its core policies, strategies and programmes (Topouzis, 2001 [41]).

Multiple impacts

HIV/AIDS often intensifies problems of underdevelopment (e.g. negative impacts of inadequate basic water and sanitation services) and socio-economic imbalances and inequalities (impoverishment of population segments). Natural or human-made disasters (drought, war) have a more devastating impact due to the reduced capacity to cope. AIDS specific responses alone are unlikely to deal with these multiple impacts, but approaches that address broader development problems across sectors, are more effective, highlighting the specificity of AIDS where necessary (Hemrich and Topouzis 2000).

41. www.unaids.org/bestpractice/digest/files/topouzisMoA2011.doc

Difficulties in putting a multi-sectoral approach into practice

However, while it is easy to speak of a multi-sectoral approach, it is often difficult to put this into practice. First of all, multi-sectoral has two meanings: there is multi-sectoral in the sense of private, public and NGO sectors; and there is multi-sectoral in the sense of different (public) sectors such as health, water, and agriculture working together. Both types are necessary for the prevention and mitigation of HIV/AIDS. Secondly, there are policy and strategy developments that make implementation of a multi-sectoral approach difficult. For instance, the sector-wide approach (SWAP) can be positive in the sense of involving the private and NGO sectors (if indeed applied as intended), but does not really facilitate co-operation between different technical sectors.

Decentralisation

Decentralisation processes generally facilitate a multi-sectoral approach, because at the lowest – district or local - government levels, decisions on resource allocation to the different sectors are made. In many countries where effective decentralisation has taken place, there are District Development Councils/Committees that are the logical place for multi-sectoral planning for HIV/AIDS. It may also be possible to establish such a forum within an already existing multi-sectoral platform at district level. Examples are Water Resources Management Platforms or District Water, Sanitation and Hygiene (WASHE) committees. Arrangements will have to be context specific and depend on the local situation. An example of a district level framework is given in the publication "Rural workers' contribution to the fight against HIV/AIDS: a framework for district and community action" [42], Royal Tropical Institute (KIT), World Bank, TANESA, UNAIDS.

8.3 Water, sanitation and hygiene education are key services for impact mitigation

The linkages between the water and sanitation sector and HIV/AIDS have been described in section 4. Basically, there are five key areas where water and sanitation play a role in mitigating the impact of HIV/AIDS:

Staying healthy

Diarrhoea and skin diseases are common opportunistic infections that can be reduced by safe water supply and sanitation. In order to optimise the impact of WS&S services, they must be integrated with hygiene promotion that focuses on safe water handling and appropriate sanitation practices. Particular attention has to be given to the specific needs of HIV positive people and their caregivers.

Home-based care

Home-based care (caring for people living with AIDS within communities) is now regarded as an essential element in the continuum of care. A reliable water supply and good sanitation are indispensable for this (bathing, washing, cleaning and disinfecting the home environment, water for taking drugs, latrines to avoid contamination of water sources, and increase of comfort and dignity of patients). Hygiene education must be integrated in training for home-based care.

42. http://www.kit.nl/health/assets/images/Rural_AIDS_finalcomplete.doc

Infant feeding

Babies of HIV positive mothers can be infected through breast milk. As an alternative to breastfeeding, bottle-feeding is suggested where this is possible – depending on affordability, cultural and social acceptability. Safe water, sound sanitation practices and hygiene education are needed to prevent the baby from falling ill with diarrhoea. There is ongoing discussion and research into the prevention of mother-to-child transmission of HIV [43] because bottle-feeding is often not a realistic alternative.

Labour saving

Improved access to water supply provides important labour saving benefits to households affected by HIV/AIDS.

Water for productive use

Access to water increases food security, which in turn helps people to remain healthy. Nutrition can be improved by making food softer and easier to eat by mixing it with safe water where people are suffering from mouth ulcers or thrush and cannot eat solid foods. Water is also a possible source for income generating activities such as beer brewing, food production and tending of livestock.

8.4 The water and sanitation sector lags behind in addressing HIV/AIDS

Although the links between water and AIDS are clear and the sector is being affected in many ways, very little attention is being given to this issue by policy makers, water departments or even by water NGOs. Moreover, many donors do not address HIV/AIDS adequately in their water and sanitation policies. There is a lack of systematic and in-depth information on the relationship between HIV/AIDS and water, sanitation and hygiene, and on the initiatives undertaken by individual countries, organisations and programmes to address HIV/AIDS. In this respect, much can be learned from the agricultural sector [44] and the education sector [45] where HIV/AIDS is being addressed in policies and where strategies are being developed to integrate HIV/AIDS into sector programmes.

8.5 Mainstreaming HIV/AIDS in the water sector

Mainstreaming is the integration of HIV/AIDS approaches into institutions and programmes. Mainstreaming assesses the impact of HIV/AIDS within the organisation in terms of staff infections, prevention of further spread and support to those affected and infected through a number of strategies as described in section 5. In general, even in other sectors, this aspect of mainstreaming is not carried out because of the stigma attached to HIV/AIDS. Mainstreaming also concerns addressing and anticipating the impact of HIV/AIDS on the programmes and services that are being implemented in the sector, and with the effect of such programmes on the spread of HIV/AIDS.

43. http://www.unicef.org/aids/mother.htm
44. http://www.fao.org
45. http://www.unesco.org/iiep/eng/focus/pages/1.9.2-hivaids1.html)

A basic principle in mainstreaming is that the sector keeps to its core business. Too often, mainstreaming means that sector staff are expected to carry out IEC activities in communities in the field of HIV/AIDS and/or to serve as condom providers in communities. This is not what mainstreaming is all about: it assumes that such staff are willing and able to do this, and have the necessary training (which is often not the case), and it takes time away from core functions.

For instance, using agricultural extension staff for AIDS awareness raising and condom promotion diverts staff from effective mainstreaming. Examples of useful mainstreaming include: promotion of less labour intensive crops and collective forms of production; assistance to child- and women-headed households that lack the technical knowledge and skills associated with adult male household members; and assisting co-operatives in developing a strategy for inclusion of whole households rather than individual persons etc.

Mainstreaming requires, first of all, a commitment from the management of the organisation. Secondly it requires time, funds and training for the staff responsible for HIV/AIDS mainstreaming. Such staff, furthermore, should have sufficient influence to impact effectively within all sections of the organisation.

No examples have been found of mainstreaming of HIV/AIDS in water and sanitation. It could include addressing issues such as back-up systems for operation and maintenance, social and financial sustainability, and adaptation of the technical designs. Mechanisms are needed at different levels, situated both internally within water supply organisations and externally to ensure change. Much can be learned from experiences in mainstreaming gender. In addition policies and strategies would have to be adapted for the most needy in terms of labour contributions, tariffs etc. (Bell (2002) [46]; Cohen (2002d) [47]; Tallis (2002) [48]).

8.6 Water supply and sanitation programmes that stimulate empowerment and poverty alleviation also address key issues for HIV/AIDS prevention and mitigation

Empowerment

A combination of empowerment of key actors and multi-sectoral support to their interventions, can be effective in developing capacities of local communities to tackle development issues within their own environment. This has been demonstrated in community management in water supply and sanitation, and in poverty alleviation programmes aimed at community empowerment. The same has been demonstrated in HIV/AIDS in Local Response Programmes that focus on the way in which individuals, families and communities behave, and then use this as a basis for strategy development.

Partnership

Models used in earlier HIV/AIDS prevention programmes assumed that people would modify their practices and beliefs once they had access to adequate information and technology. It is now recognised that information and technology are necessary, but not sufficient, conditions for an effective and sustained response. There are limits to what people can do on their own and therefore it is necessary to create an enabling

46. http://www.ids.ac.uk/bridge/reports/CEP-HIV-SR.pdf
47. http://www.undp.org/hiv/publications/issues/english/issue33e.htm
48. http://www.ids.ac.uk/bridge/reports/CEP-HIV-report.pdf

environment through partnerships among key social groups and service providers, mediated by facilitators or catalysts.

Key social groups, service providers and facilities

Key social 'groups' at community level can be women organisations, development committees (water, sanitation, health etc.), people affected by HIV/AIDS and/or traditional leaders. Service providers at district and local level include not only the health sector but also other sectors such as water supply, education (schools), agriculture and local government. They may be NGOs, faith-based organisations or the private sector. Finally, facilitators or catalysts facilitate the process in which partnerships are formed effectively. Such facilitators may come from any of the key social groups or from outside.

Roles

The activities of service providers should be seen as complementary to and supportive of activities initiated at community-level. The role of the facilitators is to help empower communities to address HIV/AIDS issues and to mobilise communities to formulate their own HIV/AIDS action plans. They can play an important role in mobilising and empowering service providers as well.

Tools

For this to happen, service providers need appropriate approaches and tools. In the water supply and sanitation sector such tools have been developed over the past fifteen years and have been effective in stimulating ownership and ensuring sustainability. Many of these tools are adapted for use in HIV/AIDS and although their application is not yet widespread, it is gaining ground. UNAIDS is in the process of developing a toolbox for local responses. This includes techniques used in the water sector that have been adapted for use in HIV/AIDS. More information can be found on the KIT web site [49].

IEC channels and materials

The use of information, education and communication (IEC) channels and materials to combine hygiene promotion with HIV/AIDS education could be advantageous to both sectors, depending on the local context. Examples are the use of a historical profile (discussion on when HIV/AIDS became an issue), seasonal calendar (discussing the impact of seasonal migration), community mapping (discussing places that facilitate sexual encounters), or wealth ranking.

8.6 Involvement of people affected by HIV/AIDS

At community and district level, it is essential to involve people living with or affected by HIV/AIDS, in planning and implementing all development activities. They themselves can best judge how programmes affect them and what approaches work to avoid discrimination and social exclusion. It is also important to show that people infected with the HIV virus can continue to live a productive life, continue to care for their families and contribute to community activities. Such courageous people have an important function in breaking the silence that surrounds HIV/AIDS and contribute to a reduction in discrimination and stigma.

49. http://www.kit.nl/health/html/aids_.asp

9. Implications for the water and sanitation sector: multiple responses to HIV/AIDS

The lessons learned have been discussed in the previous section. On the basis of these lessons, and following the same points, some suggestions are made for strategies that the water and sanitation sector could develop to address the HIV/AIDS problem. This can be done at different levels, and does not necessarily imply increased funding, although this is needed for larger coverage. The suggestions are quite general, and it is suggested that water and sanitation organisations themselves discuss the lessons learned and develop their own strategies based on the local situation.

9.1 National leadership and political commitment at all levels

National governments need to face up to AIDS as a threat to their country's development agenda. They have to lead the response to HIV/AIDS by addressing the epidemic openly and by integrating it in all their policies and instruments for development, such as Sector Wide Approaches and Poverty Reduction Strategy Papers. A useful toolkit that will assist in mainstreaming AIDS in PRSPs can be found here [50].

The water and sanitation sector, like all other sectors, must make a commitment to address HIV/AIDS and develop a policy on AIDS on the basis of an assessment of HIV/AIDS impact on their organisations and programmes. Where necessary, existing policies may need to be adapted, for instance on cost recovery. National governments have to develop monitoring systems to assess progress and enforce action if progress is below what is planned. But it is not just national governments that must make a commitment to address HIV/AIDS. Local government has a key role to play. In addition, donor governments and donor organisations have important responsibilities. Even here, HIV/AIDS is all too often seen as a health sector issue and not as a crosscutting issue affecting all development activities.

9.2 HIV/AIDS is a development problem that requires a multi-sectoral approach

A strategy for a multi-sectoral response [51] to HIV/AIDS includes:

- considering HIV/AIDS as a development issue that has implications in all areas of policy making,
- involving all sectors in developing a framework to respond to the epidemic at national, district and community levels,
- identifying the comparative advantages and roles of each sector in implementing a response (in keeping with their core business), and identifying where sectors need to take action together or individually,
- encouraging each sector to assess how it is affected by and affects the epidemic, and developing sectoral plans of action at different levels,
- developing partnerships between government departments/ministries, and between the public sector, the private sector and civil society.

50. http://www.unaids.org/publications/documents/economics/agriculture/JC536-Toolkit-E.pdf
51. http://www.ids.ac.uk/bridge/reports/CEP-HIV-report.pdf

The focus of multi-sectoral interventions should be at local and district level, where it has to be made operational. Where multi-sectoral mechanisms are already functioning, opportunities for HIV/AIDS-related initiatives should be integrated. The district level framework given in the publication "Rural workers' contribution to the fight against HIV/AIDS: a framework for district and community action", Royal Tropical Institute (KIT), World Bank, TANESA, UNAIDS [52] gives practical steps to be followed in the development of a multi-sectoral approach at district level.

9.3 Water, sanitation and hygiene education are key services for impact mitigation

In the light of the linkages between water supply, sanitation and HIV/AIDS mentioned in sections 4 and 8, the sector has to assess how best it can support communities to access safe water supply, sanitation and hygiene education to mitigate the impact of HIV/AIDS and to support community care for those affected and infected by HIV/AIDS. This may imply that policies and strategies have to be changed, but should include:

- water and sanitation as a human right: social benefits, dignity etc.,
- focus on robust, affordable and sustainable service levels, with a particular emphasis on their cost implications to ensure HIV/AIDS affected households are not excluded from the benefits. (This must also address the issue of community labour, cash contributions and tariff policies.),
- focus on labour and energy saving benefits,
- focus on water for health: reduction of opportunistic diseases etc.; combine and integrate gender-sensitive hygiene and HIV/AIDS education programmes (social marketing; participatory approaches),
- focus on economic benefits (productive use) and recognition of the importance of water for food security, nutritional values, diversification for the poor and vulnerable: integrated water resources management perspective and Sustainable Livelihoods Approach,
- empowerment of women and people living with HIV/AIDS and their care-givers,
- pro-poor financing mechanisms (cost recovery policies; (cross) subsidisation),
- in high prevalence areas: special attention and social protection for the most vulnerable: elderly, widows/widowers, orphans (ability to pay; participation in decision-making), households affected by HIV/AIDS.

9.4 The Water and Sanitation Sector lags behind in addressing HIV/AIDS

Advocacy is the first step to raise awareness of the linkages between HIV/AIDS and water and of the necessity to mainstream HIV/AIDS both internally and in the programmes of the water sector. This does not only apply to the public sector, but also to the private sector and the NGOs. Possibly water NGOs could take a lead in this as they are more operational at community level and are aware of the increased needs and effects of HIV/AIDS on the service of the sector. Opportunities for employing people living with HIV/AIDS as community health educators should be explored.

52. http://www.kit.nl/health/assets/images/Rural_AIDS_finalcomplete.doc,

9.5 Mainstreaming HIV/AIDS in the water sector

A sectoral strategy has to be developed to deal with the internal (organisational) impact of HIV/AIDS, with the following components:

- internal impact assessment that covers issues mentioned under section 5 and serves as a basis for strategy development,
- development of workplace policies that create a supportive organisation, with an atmosphere of openness and confidentiality,
- development of prevention strategies that include IEC, peer education programmes, condom distribution and availability, adjustment of working conditions to reduce susceptibility and elimination of sexual harassment in the organisation - with all strategies taking the gender dimension into account,
- adaptation and reorganisation of workload: incorporation of HIV/AIDS concerns into work planning procedures; strategies of multi-skilling and reserve staff; adjustment of performance appraisal systems to manage impacts on productivity,
- integration of HIV/AIDS into all training activities; development of on-the-job training systems for multi-skilling; and development of plans to overcome difficulties in finding and training new staff.

With respect to external mainstreaming, each programme operating in a HIV prevalence area needs to assess how HIV/AIDS may affect its target group, activities, strategies, objectives and operations. The questions that need to be addressed are:

- How will the HIV epidemic affect water and sanitation programmes (in terms of target groups, objectives, strategies, activities, human and financial resources)?; and
- How will water and sanitation programmes (in terms of target groups, objectives, strategies, activities, human and financial resources) influence the HIV epidemic?

Thus programme elements can either affect or be affected by the epidemic. Each element can contribute to enhancing or reducing the spread and/or impact of the epidemic. On the basis of the assessment, strategies can be developed within the sector, within departments and within organisations.

9.6 Water and sanitation programmes that stimulate empowerment and poverty alleviation also address key issues for HIV/AIDS prevention and mitigation

It is methodologically very difficult to single out HIV/AIDS as a single factor affecting livelihoods, or as a single cause of poverty. It is easier to mainstream HIV/AIDS as one among a number of significant factors impacting on rural livelihoods. It is, however, important, to have enough information to raise awareness of the immediate and long-term effects of HIV/AIDS and the need for practitioners and policy makers to begin addressing this impact as a matter of urgency.

Creative methods are needed, including expanding the time scale and scope. This also ensures dealing with HIV/AIDS as one of the factors at stake. Care should be taken to avoid focusing on AIDS-affected households at the expense of other households which may be equally or more needy. A Sustainable Livelihoods Approach is useful for enhancing the understanding of the impact of HIV/AIDS in context along with other factors affecting livelihoods and poverty (White and Robinson 2000 [53]).

53. http://www.livelihoods.org/cgi-bin/dbtcgi.exe

Examples of policies that stimulate empowerment and poverty alleviation are those that:

- speed up funding for water and sanitation programmes in rural areas and low-income urban settlements,
- redefine 'domestic water supply' to include not only water for basic needs but also water for small-scale production,
- address inequality in assets and incomes by, for example, including new social protection measures for the poor, including people in conflict areas and those with HIV/AIDS; adapting cost recovery strategies to accommodate the poorest (often HIV/AIDS stricken) households,
- identify and implement strategies to involve the poorest (often HIV/AIDS stricken households; older people/women/children) in water and sanitation development and management decision-making,
- develop/offer technologies that do not require much labour for operation and maintenance,
- facilitate micro credit schemes for income generation,
- promote a truly demand driven/client based approach.

9.7 Involvement of people living with HIV/AIDS

Many countries have organised groups of people living with HIV/AIDS that could be asked to assist in breaking down stigma and discrimination within the organisations. They could also assist in mainstreaming HIV/AIDS in ongoing programmes. Of course, it would be best if HIV positive people from within the organisations would take this role, but this may as yet not be possible, depending on the prevalent attitude. See for instance [54].

In conclusion it can be said that the effects of the HIV/AIDS epidemic would be less disastrous if the water and sanitation sector played its part. Taking measures that ensure the sustainable provision of basic water and sanitation services that are indeed reliable, accessible and affordable for everybody would already be a huge contribution. In many countries, however, this cannot be achieved without explicitly addressing the impact of HIV/AIDS in all its dimensions.

54. http://www.inpplus.org/About.html; www.icw.org; http://www.xs4all.nl/~gnp/asap.html; http://www.livingwithhiv.net/gipa.html; http://www.irinnews.org/AIDSreport.asp?ReportID=1301

TOP Resources

A lot of useful information is available. In this section a selection is made of publications, websites and toolkits.

TOP Publications

Ashton, P. and Ramasar, V. (2001*).* Water and HIV/AIDS: some strategic considerations in Southern Africa. Pretoria
The publication is online available as a chapter (16) of Turton, A.R. & Henwood, R. (Eds.) *Hydropolitics in the Developing World: A Southern African Perspective*, African Water Issues Research Unit (AWIRU) (2002).
[http://www.internationalwaterlaw.org/Articles/hydropolitics_book.pdf]
This is probably the first publication that draws attention to the negative effects of the HIV/AIDS pandemic on the provision of wholesome water supply and efficient resource management. First a strategic overview of the HIV/AIDS panpidemic in Southern Africa is provided and then the extent in which it influences and is influenced by water resource management on the continent is examined..

Bell, E. (2002). Gender and HIV/AIDS: supporting resources collection.
Bridge Development- Gender, Institute for Development Studies, UK. Available online.
[http://www.ids.ac.uk/bridge/reports/CEP-HIV-SR.pdf]
This publication provides summaries of key resources outlining why gender is important in understanding the impact and spread of HIV/AIDS. Different strategies are discussed that have been employed to combat the epidemic and help this affected. Recommendations for policymakers and practitioners are provided as well as information on courses, websites, networking and contact details of organisations specialising in gender and HIV/AIDS.

Bjorkman, A. (2002). HIV/AIDS and Poverty Reduction Strategies.
UNDP Policy note.
Available online. [http://www.undp.org/hiv/docs/HIVPRS.doc]
The Policy Note provides a synthesis of cutting-edge thinking on the interface between poverty reduction strategies and efforts to reverse the spread of HIV/AIDS. It proposes nine policy areas that UNDP and its partners must focus on as a matter of priority.At the core of the Policy Note is a checklist with specific guidance on how to integrate HIV/AIDS into poverty reduction strategies, relevant for all countries regardless of their current HIV prevalence rates. The Note concludes by bringing the discussion to the global level. It recommends that UNDP—in the context of the Millennium Development Goals Campaign—step up its advocacy for placing HIV/AIDS at the centre of the international development agenda, capitalising and building on its work at country level.

Cohen, D. (2002). Human Capital and the HIV epidemic in sub-Saharan Africa.
Working Paper 2, ILO Programme on HIV/AIDS and the World of Work, Geneva.
Available online.
[http://www.ilo.org/public/english/protection/trav/aids/download/pdf/wp2_humancapital.pdf] This working paper concerns the impact of HIV/AIDS on human capital in sub-Saharan Africa. It provides insights into the impact of the epidemic on sustainable development in the region that is hardest hit by AIDS and already seriously affected by poverty, by focussing on key factors critical to human capital. The paper analyses the

loss of human capital particularly in the health and education sector and suggests how to respond to AIDS-related loss of skilled and professional labour through mobilising governments and workplace partners. A multi-sectoral programme of action to maintain human capital is provided.

Cohen, D. (2002). Poverty and HIV/AIDS in Sub-Saharan Africa
Issues Paper No. 27, HIV and Development Program, UNDP.
Available online. [http://www.undp.org/hiv/publications/issues/english/issue27e.html]
The paper addresses the basic problem that the HIV Epidemic makes sustained human development more and more unattainable, and actually adds to poverty, while it also destroys the human resource capacities essential for an effective response. Cohen explains that the two bi-causal relationships (between poverty and HIV/AIDS and between HIV/AIDS and poverty) can best be understood as a process. The epidemic has stages and the effects of the epidemic are aggregative.

Cohen, D. (2002 d). Mainstreaming the Policy and Programming response to the HIV epidemic.
Issues Paper No. 33, HIV and Development Program, UNDP.
Available online. [http://www.undp.org/hiv/publications/issues/English/issue33e.htm]
This paper argues that what is needed is a more complex understanding of the epidemic than has existed hitherto, together with an increased capacity for designing and implementing more effective policy and programming responses. All of these conditions need to be present for an effective worldwide response to the epidemic, of which UNAIDS is an important component. Mainstreaming HIV has to contain all of these - a more complex understanding; a capacity for improved design of programmes and projects through new processes, which are socially inclusive; and new and different and more participatory systems for implementing programme responses.

Franks, T. and Cleaver, F. (2002). 'People, livelihoods and decision making in catchment management: a case study from Tanzania'. In: *Waterlines,* vol. 20. no.3, 7-10 This article illustrates the complexity of catchment water managent and the importance of understanding the context of economic, political and cultural aspects of livelihoods in a catchment. Issues highlighted include the need for institutions, which cross resource boundaries, ways of including those stakeholders usually excluded from decision-making processes, and the importance of livelihood constraints - including HIV/AIDS - on people's participation in resource management.

Hemrich, G. and Topouzis, D. (2000). "Multi-sectoral responses to HIV/AIDS: constraints and opportunities for technical co-operation". In: *Journal of International Development,* 12, 85-99
This paper proposes a conceptual framework on the relevance of HIV/AIDS to non-health technical cooperation programmes, highlighting factors of susceptibility and vulnerability to the epidemic. It is argued that as HIV/AIDS is rooted in problems of underdevelopment, sucha as poverty, food and livelihood insecurity, socio-cultrual inequalities and poor support services and infrastructure, AIDS-specific responses alone are unlikely to contain the spread or mitigate the impact of the epidemic.A shift is needed towards an approach that addresses broader development problems across sectors, highlighting the specificity of HIV where necessary.

Loewenson, R. and Whiteside, A. (2001). HIV/AIDS; Implications for Poverty Reduction.

UNDP. Background paper for the UNDP for the UN General Assembly. Special session on HIV/AIDS 25-27 june (2001).
Available online. [http://www.undp.org/dpa/frontpagearchive/2001/june/22june01/hiv-aids.pdf] This paper concerns the subject of counteracting the developmental impact of the epidemic. The devastating and multifaceted socio-economic impact of HIV/AIDS, well beyond the tragedy of illness and death, is described. Five priorities for action in coping with this impact are identified: preventing the collapse of essential public services; intensifying and adapting poverty reduction efforts; protecting educational achievements;mitigating the impact on labour productivity and supply, and promoting opportunities for women who carry the brunt of the epidemic.

Mutangadura G., Mukurazita D. and Jackson, H. (1999). A review of household and community responses to the HIV/AIDS epidemic in the rural areas of sub-Saharan Africa. UNAIDS, Geneva
This publication is a review and analysis of existing literature on household and community coping responses to HIV/AIDS. The variety of responses is categorised in: strategies aimed at 1. Improving food security, 2. Supplementing income so as to maintain household expenditure patterns, 3. Alleviating the loss of labour. Major policy options identified are: strengthening the coping capacity of households by improving their access to limited resources; social assistance programs, and working through existing indigenous traditional community mechanisms instead of displacing them.

Nicol, A. (2000). Adopting a Sustainable Livelihoods Approach to Water Projects: Implications for Policy and Practice. Sustainable Livelihoods Working Paper Series No.133. Overseas Development Institute, London, UK. Nottingham: Russel Press.
Available online. [http://www.livelyhoods.org, NOTE: on the Livelihood homepage go to Key Documents under Information Resources. Type Nicol into Find documents by word or phrase and click Find]
Nicol identifies the principal features of the Sustainable Livelihoods Approach to water supply projects as a first step in reorienting work in the sector. Issues covered include the pre-eminence of a health-based view within the water and sanitation sector; using the SL framework to analyse water in the context of poor households, and assessing the operational and theoretical implications of adopting a SL approach.

Ondari, J. and Lidonde, R. (2001). The impact of HIV/AIDS on Water and Sanitation Services Delivery. Available online.
[http://www.irc.nl/source/bulletin/sb22.html#hivaidsh]
Paper presented at 13th Regional Water and Sanitation Seminar on “Hygiene, Sanitation, Water and HIV/AIDS-Emerging Issues, Nairobi. The article focuses on Kenya and identifies upcoming problems such as competing budget allocations (HIV/AIDS and water supply); risk of private sector involvement in an HIV/AIDS context; reduction in community participation in water activities; viability of credit schemes for water supply; increased costs of water supply provision leading to increase of tariffs; water demand reduction and decreased investment by public sector in basic services such as water supply.

Tallis, V. (2002). Gender and HIV/AIDS.
Bridge Development-Gender, Institute of Development Studies, overview report.
Available online. [http://www.ids.ac.uk/bridge/reports/CEP-HIV-report.pdf]
This paper argues that HIV/AIDS is not only driven by gender inequality – it entrenches gender inequality, putting women, men and children further at risk. Defining and

stigmatising those 'at risk' as men who have sex with men, sex workers and drug users has until recently obscured the increasing infection rate among people generally thought to be 'safe', including married and older women. The dominant factor is now heterosexual sex. As individuals and in their social roles women are disproportionately affected by HIV/AIDS.

Topouzis, D. (2001). Addressing the impact of HIV/AIDS on Ministries of Agriculture: focus on Eastern and Southern Africa. Discussion Paper. Available online. [www.unaids.org/bestpractice/digest/files/topouzisMoA2011.doc]
This paper examines the relevance of HIV/AIDS for Ministries of Agriculture (MoA) and their work, with a focus on smallholder agriculture. Analysed in detail are the impact on: staff vulnerability to HIV infection and AIDS impact; disruption of MoA operations and erosion of capacity to respond to the epidemic; increased vulnerability of MoA clients to food and livelihood insecurity, and the relevance of certain policies, strategies and programmes in view of the conditions being created by HIV/AIDS.

UNAIDS, (2002). Report on the global HIV/AIDS epidemic, UNAIDS.
This report presents the views on the state of the HIV/AIDS epidemic of the joint United nations Programme on HIV/AIDS (UNAIDS) and presents evidence of the responses to the epidemic mounted by many partners, including governments, the business sector and civil society. The report provides positive proof that HIV, if left to run its natural course, will cause devastation on an unprecedented scale. It gives a global overview of the epidemic and an overview of global priorities. It discusses impact, prevention, care and treatment and support for people living with HIV/AIDS. It presents what is necessary to meet the need and how commitment can be turned into action.

UNDP, (2002). HIV/AIDS Implications for Poverty Reduction. UNDP Policy Paper. Available online.
[http://www.onusida-aoc.org/Eng/Poverty,%20debt%20and%20AIDS.htm]
UNDP, (2002). HIV/AIDS Implications for Poverty Reduction. UNDP Policy Paper.
The purpose of this policy paper is to discuss the mitigation of impact of the epidemic on social and economic development by intensifying national poverty reduction efforts and providing support for those particularly affected. It describes this impact and identifies priorities for action in coping with this impact.

Whiteside, A. and Barnett, T. (2002). AIDS in the twenty-first century. Disease and globalization. Palgrave MacMillan, New York, USA
This book presents compelling data and research, which reveals the shocking social and economic impact of HIV/AIDS on a global scale. Barnett and Whiteside-experts in the field for over 15 years-argue that it is vital to not only look at the disease in terms of prevention and treatment, but to also consider consequences which affect households, communities, companies, governments, and countries. This is a major contribution toward understanding the global public health crisis, as well as the relationship between poverty, inequality, and infectious diseases.

World Bank, (1997). Confronting AIDS. Public priorities in a global epidemic.
World Bank Policy Research Report, Oxford University Press
This report outlines the strategic role that government must play in slowing the spread of HIV and mitigating the impact of AIDS. Drawing on the knowledge accumulated in the 17 years since the virus that causes AIDS was first identified, the report highlights policies that are most likely to be effective in managing the epidemic. These include

early actions to minimize the spread of the virus, aiming preventive interventions at high risk groups, and evaluating measures that would assist households affected by AIDS according to the same standards applied to other health issues.

White, J. and Robinson, E. (2000). HIV/AIDS and Rural Livelihoods in Sub-Saharan Africa. Natural Resources Institute, University of Greenwich, UK. Available online. [http://www.livelihoods.org/] (NOTE: on the Livelihood homepage go to Key Documents under Information Resources. Type Robinson into Find documents by word or phrase and click Find).
This study brings together literature on HIV/AIDS with literature on sustainable livelihood approaches to look at the broader impacts and possible responses to the AIDS epidemic. In particular it reflects on the need for more community level and cross-sectoral analysis to better target poverty alleviation programmes seeking to tackle HIV/AIDS. The study also provides helpful contacts to organisations working on HIV/AIDS and livelihoods.

TOP Websites

CADRE [www.cadre.org.za]
A South African AIDS media research organisation - which has a range of interesting research papers and media guidelines reviewing what works and what doesn't in terms of getting the message across. Particular emphasis is given to 'action media' - i.e. participatory development of local relevant materials.

International AIDS Economic Network (IAEN) [http://www.iaen.org/]
Informal group of researchers, policymakers, consultants, NGOs, development agencies, multilaterals, universities and others. The site focuses on the economics of AIDS in developing countries and includes data, news about conferences, and discussion platforms. International Labour Organisation (ILO), HIV/AIDS and the World of Work, information on labour related issues, conference proceedings and publications. [http://www.ilo.org/public/english/protection/trav/aids/]. Code of practice on HIV/AIDS and the workplace.

IDS Participation Group Page [http://www.ids.ac.uk/ids/particip/index.html#pghome]
Group of people at the Institute of Development Studies in Sussex, UK, working in support of participatory approaches to development.

Participation Learning Center [http://www.pwci.org]
Set of sample SARAR materials as applied by the Peopleworks Collaborative Inc. in a variety of sectoral field programmes.

Royal Tropical Institute (KIT), Netherlands [http://www.kit.nl/health/html/aids_.asp]
HIV/AIDS site with documentation on gender, HIV/AIDS in multi-sectoral perspective, local responses. Special section on tools for Local Responses.

Strategies for Hope Series [http://www.stratshope.org]
Site about the Publications and Media series, Strategies for Hope. Explores approaches of different agencies to the HIV/AIDS epidemic in developing countries.

UNAIDS: The Joint UN Programme on HIV/AIDS. [http://www.unaids.org/]
A major resource site of the joint UN Programme. The site has a large electronic bibliography with many articles on site. Includes sub-sites on Best Practices, including articles on Gender and HIV/AIDS, Community Mobilization, and HIV/AIDS Education. There are also descriptions of the International Partnership Against AIDS in Africa, and related regional activities. The site also provides links to the Programme's Co-Sponsors: WHO, UNDP, UNICEF, UNFPA, UNESCO, the World Bank and UNDCP.

UNDP/HDP [http://www.undp.org]
The site on UNDP and a sub-site on the HIV and Development Programme can be reached through the main site. The site describes the mission, programmes, and activities of the programme and provides useful links to other relevant sites. The sub-site can be reached at: http://www.undp.org/hiv/index.htm

World Bank HIV/AIDS page
[http://www.worldbank.org/html/extdr/hivaids/default.htm]

TOP Toolkits

Toolkit for mainstreaming HIV/AIDS in government ministries
[http://www.und.ac.za/und/heard/]
The toolkit aims (1) to assist priority sectors to identify areas where they are vulnerable to the impact of HIV/AIDS and (2) to suggest specific steps that can be taken. The toolkit has a generic section covering (i) understanding of HIV/AIDS; (ii) Why HIV/AIDS is a government issue; (iii) HIV/AIDS and Ministry employees; (iv) Planning tools. In addition there are tools for specific departments/sectors and AIDS briefs for different categories of government employees.

Gender Mainstreaming in HIV/AIDS: Taking a Multisectoral Approach
(2002), Commonwealth Secretariat and the Canada-based Maritime Centre of Excellence for Women's Health
To successfully address the pandemic, a gender perspective has to be mainstreamed into a broad-based and multi-sectoral response. In Botswana HIV/ AIDS is mainstreaming an approach to HIV/AIDS in all government ministries plans and NGO and private sector partnerships. This manual helps explain why all future work should include a focus on gender, a guide to how this can be achieved and information about what is being done to date. In India for example the Lawyers Collective provides legal aid to men and women affected with HIV. Case studies illustrate how programmes that promote HIV prevention by addressing gender as well as the social and economic factors that increase people's risk of infection are more likely to succeed in changing behaviour. It also contains an extensive list of online resources.
Contact Rupert Jones-Parry, Publications Unit, Commonwealth Secretariat, Marlborough House, Pall Mall, London SW1Y 5HX, United Kingdom, tel: +44 (0) 20 7747 6342, fax: +44 (0) 20 7839 9081, e-mail: r.jones-parry@commonwealth.int

Stepping Stones Training Package
[http://www2.ids.ac.uk/siyanda/search/summary.cfm?nn=665&ST=SS&KEYWORDS=stepping%20stones&SUBJECT=0&local=0&START=1]
Author: Welbourn, A.
A training package on gender, HIV, communication and relationship skills, for use with whole communities to challenge gender inequalities and inter- generational inequalities, between men and women and between older and younger people.

The HIV/Gender Continuum (2002)
[http://www2.ids.ac.uk/siyanda/search/summary.cfm?nn=819&ST=SS&KEYWORDS=hiv%2Faids&SUBJECT=0&local=0&START=11]
Author: International Planned Parenthood Federation (IPPF) Western Hemisphere Region
IPPF have developed this new tool to help investigate how responsive an organisation's services and programmes are to gender issues related to HIV prevention within an overall rights-based approach to sexual and reproductive health.

AIDS: Gendering the Response (2001)
[http://www2.ids.ac.uk/siyanda/search/summary.cfm?nn=797&ST=SS&KEYWORDS=hiv%2Faids&SUBJECT=0&local=0&START=21]
Author: Ryan, Gladys and Tallis, Vicci
This training aid, which includes a video of the same name, is to help educators and trainers facilitate discussions with development practitioners on dealing with the issue of gender and HIV/AIDS in their work. Document Type: Guide

Gender, HIV and Human Rights: A Training Manual (2000)
[http://www2.ids.ac.uk/siyanda/search/summary.cfm?nn=295&ST=SS&KEYWORDS=hiv%2Faids&SUBJECT=0&local=0&START=21]
Summary: This training manual includes both a one-day and a two-day training module, 'Gender Concerns in HIV/AIDS and Development', aimed at raising awareness of the gender dimensions of HIV/AIDS. The structure, agenda and methodology of the sessions, training aids and notes for the facilitator are provided. The document is available in English, French and Spanish.

Facing the Challenges of HIV, AIDS, STDs: a Gender-based Response (1996)
http://www2.ids.ac.uk/siyanda/search/summary.cfm?nn=799&ST=SS&KEYWORDS=hiv%2Faids&SUBJECT=0&local=0&START=41]Author: De Bruyn, Maria [
This resource pack aims to provide policy-makers, planners and programme implementers with information and ideas on how to incorporate a gender-based response to HIV/AIDS and STDs into their policies and programmes. Document Type: Tool Short Summary

UNDP, Strengthening Community Responses to HIV/AIDS: a toolkit (2000),
[http://www.undp.org/hiv/publications/toolkit/toolkit.html]

Considering HIV/AIDS in development assistance: a toolkit, Commission of European Communities (1997)
[www.worldbank.org/aids-econ/toolkit]
Author: Fransen, L. and Whiteside, A.

HIV/AIDS NGO/CBO Support Toolkit. The AIDS Alliance
[www.aidsalliance.org/ngosupport]
Support Toolkit with over 500 downloadable resources and supporting information. The toolkit includes practical information, tools and example documents to help those working to establish or improve NGO/CBO support programmes. The toolkit also describes key components of NGO/CBO support programming, based on the Alliance's experience. It also includes resources from a wide range of other organisations to bring different perspectives and experiences together.

TOP Contacts

We know of only a few organisations or contact persons that specifically deal with the link between HIV/AIDS and water. For organisations or programmes that deal with HIV/AIDS in general see TOP Websites.

Evelien Kamminga [E-mail: e.kamminga@wanadoo.nl]
Evelien Kamminga is a social anthropologist and freelance consultant with a long track record in sustainable development and poverty alleviation. She lived in Kenya and Namibia until recently working in the field of water supply, sanitation and hygiene, and natural resources management. She also did research on the realization of children's rights and social cohesion in communities that are to different degree affected by HIV/AIDS.

The Mvula Trust [http://www.mvula.co.za]
The Mvula Trust is a dynamic, innovative and professional water supply and sanitation non-governmental organisation (NGO). They are a leader within the water services sector with proven results for hundreds of projects.
The Mvula Trust's mission is to improve the health and welfare of poor and disadvantaged South Africans in rural and peri-urban communities by increasing their access to safe and sustainable water and sanitation services.
Contact person: Kathy Eales & Nomsa Mbovani
The Mvula Trust
PO Box 32351
2017 Braamfontein
South Africa

The Royal Tropical Institute (KIT) [http://www.kit.nl]
The Royal Tropical Institute (KIT) is an independent centre of knowledge and expertise in the areas of international and intercultural cooperation. The aims of KIT are to contribute to sustainable development, poverty alleviation, and cultural preservation and exchange. Within the Netherlands, it seeks to promote interest in and support for these issues.
Contact person: Madeleen Wegelin
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TOP Quiz

This quiz covers basic facts about the HIV epidemic and the linkages between HIV/AIDS and the water and sanitation sector. It has been drawn up to assist you in assessing your current knowledge and understanding of the global epidemic and its impact on the water and sanitation sector. It is partly adapted from the UNDP HIV and Development Programme. Please begin by reading through the questions and noting down your response to each. After completing the questionnaire, check your answers.

Please note your answer

1.	Infected people can pass the virus on to others through their sexual or injecting drug use behaviour for the remainder of their lives.	True False
2.	Most infected people do not know they are infected.	True False
3.	You can tell when a person is infected by looking at her or him.	True False
4.	For most people, there is only a short time between infection and the onset of HIV-related illnesses and AIDS.	True False
5.	Fifty per cent of all new cases of infection in the world occur in women.	True False
6.	The sexual transmission of the virus is facilitated by the presence of sexually transmitted infections.	True False
7.	Most of the opportunistic infections that occur during HIV infection can be treated with effective drugs.	True False
8.	Among the drugs used to treat persons infected with HIV, only the antiretrovirals (ARV) can cure HIV infection.	True False
9.	HIV/AIDS is a health problem and does not affect the water and sanitation sector.	True False
10.	The HIV/AIDS epidemic influences demand for water and sanitation services.	True False
11.	HIV/AIDS has no effect on sustainability of water supply services.	True False
12.	Water, sanitation and hygiene education are key services for impact mitigation.	True False
13.	HIV transmission through breast feeding can be avoided by ensuring access to safe water for bottle feeding.	True False
14.	Mainstreaming of HIV/AIDS in the water sector includes an assessment of the impact in the organisation itself and on the programmes that are being carried out by the organisation.	True False

TOP Answers

1. Once infected with HIV, a person is infected and infectious to others for life.

The virus can be passed on to others in a limited number of known ways:
- through unprotected penetrative sexual intercourse and injecting drug use;
- from pregnant women to their children;
- via contact with contaminated blood and tissue or organs used for transplantation.

The most common route, in 90% of new infections in adults, is through unprotected penetrative sexual intercourse. HIV transmission happens more easily where a person already has a Sexually Transmitted Disease (STD). HIV infection may be passed from a woman to her child before or during delivery or, under certain circumstances, whilst breast-feeding. Furthermore, transmission can occur through injecting drug use, blood transfusion, tissue and organ transplant.

Shortly after infection, there is a period of acute infectivity when a person is highly infectious for a short period, usually about two or three weeks. Following this period of acute infection, almost all people enter a period of several years in which they are well and have no signs or symptoms of HIV infection. During this period, a person is capable of transmitting the virus to others. Once an infected person begins to experience HIV-related illnesses or conditions, the likelihood of infecting others increases.

2. The overwhelming majority of the estimated 38.6 million adults who are living with HIV/AIDS (UNAIDS, 2002) in the world do not know they are infected.

In most parts of the world, the facilities for voluntary, confidential testing are not widely available or not available at all. People may suspect that they could be infected but, where opportunities for counselling and voluntary blood testing are not widely available, people do not have any way of knowing their infection status. Since knowledge of HIV infection status can be a factor in motivating people to change their behaviour, the establishment of such facilities is an important aspect of national HIV programs.

Even if testing were available, people may choose not to be tested where there is discrimination against infected people. Women may choose not to be tested because they feel powerless to prevent their husbands or sexual partners from infecting them or because they know that, even if they were infected, they would still have to continue carrying out their responsibilities. Moreover, they are likely to be accused of spreading the infection when they are the first to find out through the birth of an infected baby.

The advantages of being tested include: the ability to plan for one's future and that of one's children, setting aside fear and uncertainty, an incentive to prevent infection or re-infection, and for those who are infected, an ability to make changes in lifestyle and circumstances which may slow down the progression of the illness.

3. You cannot tell by looking at a person without symptoms that he or she is infected.

After the period of acute infection, there may be no observable signs of HIV infection for many years, perhaps a decade or more. When illnesses begin, certain HIV-related conditions (opportunistic infections) can be clinically diagnosed by trained personnel.

4. Progression from HIV infection to the onset of HIV-related illnesses and AIDS is relatively slow.

Studies in the United States showed that, on average, 10 years after infection occurred, 50% of those infected will have developed AIDS and some will have died, another 30% will have had some symptoms of progression and the remaining 20% will still be without symptoms ("asymptomatic"). The time from the onset of AIDS to death has been found to be around 2 years although, with improvements in lifestyle and treatment, this period may be lengthened.

These averages mask the fact that many infected people continue to lead productive and healthy lives without illness for more than ten years. Also, some people diagnosed with AIDS have continued to be well and productive for many years. Our knowledge of the eventual outcome for people who have remained well for more than ten years is limited by the newness of the epidemic.

Progression from infection to HIV-related illness may be delayed through good nutrition, reduction of stress and anxiety, adequate rest and exercise and a positive outlook on life.
Factors which may hasten progression include repeated exposure to HIV, recurrent sexually transmitted diseases (STD), drug use, excessive alcohol consumption and stress.

5. UNAIDS and WHO estimate today (December 2002) that 50% of all infected adults in the world are women.

In 1998, this figure was 43%, which indicates, unfortunately, that when it comes to HIV infection, women have achieved equality with men.

More and more women are becoming infected with HIV. In sub-Saharan Africa, according to 15 studies conducted in nine different African countries, there were between 12 and 13 women infected for every 10 men infected. In South and Southeast Asia and the Caribbean, the proportion of man and woman infected with HIV is in the order of 35%. Elsewhere the proportion is also approaching equilibrium, although more slowly.

6. The likelihood of transmission of the virus during unprotected penetrative intercourse is significantly increased by the presence of genital lesions, scarification, inflammation or infections.

Genital damage may be the result of poor hygiene, infections of the genito-urinary tract, sexually transmitted infections, trauma from sexual activity, childbirth and abortion, and traditional practices such as female genital mutilation. The presence of some genital

conditions may increase the likelihood of transmission from less than 1% to 50% for an act of unprotected penetrative intercourse.

7. There is effective treatment for most opportunistic infections.

In most cases, there are effective drugs for treating opportunistic infections (for example, tuberculosis, which represents one of the grave and frequent afflictions in the course of AIDS). Considering the multiplicity of possible infections, everything must be done to make it possible to identify the cause of the infection as early as possible. Its identification makes it possible to treat it in a specific manner and to prevent trial-and-error treatment.

Treatment and prevention of opportunistic infections associated with unsafe water and lack of sanitation, hygiene and proper nutrition can make it possible to considerably improve the life expectancy of HIV patients and to reduce the morbidity of these infections.

8. Antiretroviral drugs (ARV) do not cure HIV infection.

Even though taking antiretrovirals regularly makes it possible to reduce the quantity of virus in the organism and, consequently, to delay the development of infection, we cannot yet speak of curing. It is also believed that taking these drugs irregularly is an essential factor in the appearance of resistance to the virus.

The guidelines from UNAIDS, WHO and the International AIDS Society also state that ‘ due to the high cost of antiretroviral drugs, the complexity of regimens and the need for careful monitoring, specific services and facilities must be in place before considering the introduction of anti-retroviral drugs in any setting’. In many developing countries those services and facilities do not exist and access to these drugs must therefore be improved together with the delivery of adequate and reliable health services for the poor.

9. HIV/AIDS is a problem that affects all development sectors, including water and sanitation

It is now internationally recognized that HIV/AIDS is a complex medical, social, economic, political, cultural and human rights problem, which cuts across all sectors of developing societies. Therefore IV/AIDS prevention, care, treatment and support and impact mitigation has to be integrated into the mainstream of development planning, including in poverty eradication strategies, national budget allocations and sectoral development plans.

10. The HIV/AIDS epidemic influences demand for water and sanitation services

The general trend is that population growth rates and life expectancies are plunging. This situation causes overall demand to decrease. On the other hand, demand for services may increase locally as a result of an urban-rural migration flow, as infected people tend to return to their rural home area to die or orphans are sent to family in the rural areas. In urban areas demand may increase due to migration of people in search for employment opportunities in towns.

Due to the HIV/AIDS epidemic, people's need for clean and sufficient water and sanitation increases for reasons of health, the provision of care and for productive use.

11. Sustainability of water and sanitation services is at risk due to HIV/AIDS

The ability of water users to pay water fees is reduced due to affected households losing their primary breadwinners, overall livelihood insecurity and increased medical expenditures.
This will have an effect on the basic principles of demand responsiveness as precisely the target group that will need the services most, may be the group that cannot afford to pay.

Also the ability of water users to spend time and energy on management activities is affected, while at the same time there is an erosion of management capacities due to loss of people who have been trained in various aspects of management, operation and maintenance.

Demand responsiveness of services may be affected by lack of participation in planning, decision making and implementation of affected households because of lack of time, skills or authority (children headed households).

12. Water and sanitation services are crucial for mitigating impact of HIV/AIDS

Water and sanitation services play a key role in mitigating the impact of HIV/AIDS:

a) Staying healthy: Diarrhoea and skin diseases are common opportunistic infections that can be reduced by safe water supply and sanitation.
b) Home- based care: a reliable water supply and good sanitation are indispensable for bathing, washing, cleaning and disinfecting the home environment, water for taking drugs, and comfort and dignity of patients.
c) Labour saving: Improved access to water supply provides important labour saving benefits to households affected by HIV/AIDS.
d) Water for productive use: Access to water increases food security, which in turn helps people to remain healthy. Water is also a possible source for income generating activities such as beer brewing, food production and tending of livestock.

13. HIV transmission through breast-feeding can be avoided by ensuring access to safe water for bottle-feeding

There is a one-in-three risk that an HIV positive woman transmits the virus to her baby through breast milk, even if the child was born HIV negative. The 'obvious' solution would be to not breastfeed the child, but this has proven to be very difficult because of social, cultural and economic reasons (cost and availability of powdered milk, stigma, tradition). If these impediments can be overcome, access to safe water is an absolute must and must be coupled with hygiene education for cleaning, water handling practices and sound sanitation practices to prevent the baby to fall ill with diarrhoea.

14. Mainstreaming of HIV/AIDS in the water sector includes an assessment of the impact on water organisations internally and on the programmes that are being carried out by these organisations

Water organisations need to assess the impact of HIV/AIDS internally in terms of staff infections, prevention of further spread and required support to those affected and infected through a number of strategies. Without an internal assessment, the sustainability of the operation of programmes becomes doubtful. It is also necessary to create an atmosphere in which staff will be more perceptive to the needs of people affected by HIV/AIDS in their programmes and to put effort in reducing discrimination and stigma. External mainstreaming concerns addressing and anticipating the impact of HIV/AIDS on programmes and services provided and the possible effect of such programmes on the spread of HIV/AIDS.

List of abbreviations and acronyms

AIDS	Acquired Immune Deficiency Syndrome
FAO	Food and Agriculture Organisation
HAART	Highly Active Anti-Retroviral Treatment
HIV	Human Immunodeficiency Virus
IAEN	International AIDS Economic Network
ICW	International Community of Women Living with HIV/AIDS
IEC	Information, Education and Communication
ILO	International Labour Organisation
IRC	International Water and Sanitation Centre
KIT	Royal Tropical Institute
NAPWA	National Association of People Living with AIDS
NGO	Non-governmental organisation
PLWHA or PLWA	People living with HIV/AIDS
PRSP	Poverty Reduction Strategy Paper
SARAR	Participatory training process (Self-esteem, Associative strengths, Resourcefulness, Action planning, Responsibility)
SLA	Sustainable Livelihoods Approach
STD	Sexually Transmitted Diseases
TANESA	Tanzania Netherlands Support to AIDS Programme
TOP	Technical Overview Paper
UN	United Nations
UNAIDS	United Nations AIDS Fund
UNDP	United Nations Development Programme
UNDCP	United Nations International Drug Control Programme
UNESCO	United Nations Education, Scientific and Cultural Organisation
UNICEF	United Nations Children Fund
UNFPA	United Nations Population Fund
VCT	Voluntary Counseling and Testing
WHO	World Health Organization

About IRC

IRC International Water and Sanitation Centre
IRC facilitates the creation, sharing, and use of knowledge so that sector staff and organisations can better support poor men, women and children in developing countries to obtain water and sanitation services they will use and can sustain. It does this by improving the information and knowledge base of the sector and by strengthening sector resource centres in the South.

As a gateway to quality information, the IRC maintains a Documentation Unit and a web site with a weekly news service, and produces publications in English, French, Spanish and Portuguese both in print and electronically. It also offers training and experience-based learning activities, advisory and evaluation services, applied research and learning projects in Asia, Africa and Latin America; and conducts advocacy activities for the sector as a whole. Topics include community management, gender and equity, institutional development, integrated water resources management, school sanitation, and hygiene promotion.

IRC staff work as facilitators in helping people make their own decisions; are equal partners with sector professionals from the South; stimulate dialogue among all parties to create trust and promote change; and create a learning environment to develop better alternatives.

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People living with HIV/AIDS (PLHIV) are at increased risk of diarrhoeal disease and enteric infection. This review assesses the effectiveness of water, sanitation, and hygiene (WASH) interventions to prevent disease among PLHIV. Methods: We searched MEDLINE, EMBASE, Global Health, The Cochrane Library, Web of Science, LILACS, Africa-wide, IMEMR, IMSEAR, WPRIM, CNKI, and WanFang. Water, Sanitation, and Hygiene. Clean water is vital for a healthy population. In Malawi, 80% of the population has access to an improved source of drinking water, but that leaves about 4 million people who still lack access to safe water. Additionally, only six percent of the population has access to an improved sanitation facility. Poor sanitation practices and improper storage of drinking water commonly lead to waterborne illnesses such as cholera. According to the 2010 Demographic Health Survey, 78% of children under two years old experienced at least one incident of diarrhea. In Malawi, 8 Water sanitation hygiene in health-care facilities. Health-care waste. Publications. How to integrate water, sanitation and hygiene into HIV programmes. Authors: World Health Organization; USAID. Publication details.Â The objective of this document is to facilitate the integration of WASH (water, sanitation, hygiene practices) into official HIV guidelines and standards, and into HIV programming. The document: outlines why WASH should be included in HIV programmes; details which WASH practices to include in HIV programmes; identifies how WASH can be included in HIV programmes, illustrated by case studies from various countries; provides concrete recommendations for country programmes and those implementing them on how to integrate WASH into HIV policies and programmes.