



# 'Complex drought' in southern Africa – a water and sanitation perspective

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**During 2002–3, food insecurity was reported in southern Africa, resulting from a fall in agricultural production levels. The origins of this crisis appear not to be so much low rainfall, however, as a number of factors, some relating to the high incidence of HIV/AIDS and the consequent decline in maintenance of water sources. Humanitarian assistance should address these complex causes rather than simply seeing this as a water shortage.**

In mid-2002, the international community was alerted to a humanitarian crisis in southern Africa, affecting up to 16 million people in six countries. It was described as a regional drought and associated food insecurity crisis, due in part to adverse climatic conditions for two consecutive growing seasons.

The definition of drought is quite broad but is generally understood as a problem related to water scarcity. Typically, as a period of drought progresses, surface water and soil moisture begin to disappear leading to greater reliance on groundwater for both irrigation and domestic use. As the water table drops, water levels in boreholes and shallow wells fall. This results in increased stress being placed on neighbouring or deeper boreholes, with a greater chance of pump breakdown and salt-water intrusion through over use, which may eventually force communities to travel long distances to collect safe water or switch to other, unprotected, water sources. Populations facing water shortages experience a decline in their agricultural production and public health. Less water means that agricultural yields fall, with a resulting impact on livelihoods and economic status, and with greater food insecurity and malnutrition. This is accompanied by an increase in diseases related to unsafe water and poor hygiene. In extreme cases it can lead to migration and starvation.

Understood in this way, drought has guided past humanitarian intervention to address the problems of food

insecurity through food aid followed by agricultural input projects, and to respond to the problem of water scarcity either by deepening groundwater sources or constructing new ones. If people are supported through the most difficult time, then they are in a better position to 'bounce back' once the rains return. These were typical responses to the last major drought experienced in southern Africa in 1992–3.

In some respects interventions in 2002 and 2003 followed this lead, and international NGOs in partnership with the WFP (United Nations World Food Programme) delivered food aid and agricultural inputs to vulnerable populations and many actors developed proposals aimed at borehole construction.



When nearby handpumps fail, people often use unprotected water sources which are a health risk

However, while mitigating some of the extreme symptoms of the crisis, these methodologies may not offer the most appropriate assistance to crisis-affected communities, for the following reasons.

## Is the southern African crisis a drought?

Early on, questions were being raised as to whether this was a drought. While rainfall had been erratic, annual rainfall figures were average and certainly healthier than figures for 1992–3, with surface and groundwater levels remaining fairly stable. However, agricultural production was without question lower than in previous years. Unpredicted dry spells at crucial times in rain-fed crop cycles negatively affected growth and yield, but this is a frequent problem that usually only leads to crisis in extreme situations.

Seeking to explain why vulnerability appeared to have increased, some studies have highlighted complex and inter-related problems in addition to erratic weather. Structural change (e.g. the commercialization of marketing boards), political upheaval and economic problems (e.g. the effects of structural adjustment and increasing poverty), among others, may have made negative contributions.<sup>1</sup>

Many commentators have also highlighted the correlation between the current food crisis and the HIV/AIDS pandemic. Southern Africa has one of the highest incidences of HIV/AIDS, at between 16 and 30 per cent of the population.<sup>2</sup> AIDS is decimating the



A food distribution point in Lesotho. Were the food shortages in 2002/3 the result of drought, or people's vulnerability due in part to HIV/AIDS? (photo credit: WFP/Richard Lee)

most productive sections of society – young adults and especially women – whose labour is often relied upon for food cultivation, thereby contributing directly to the food shortages at the heart of this crisis. Food aid distributions, while imperative, only address the immediate threat of severe malnutrition.

What is often ignored is the threat of endemic disease, which is heightened by a decline in nutritional intake and which in turn affects nutritional uptake. People suffering from HIV/AIDS not only require more calories but also particularly require more protein-based calories to remain healthy longer, and are at greater risk from attendant disease. While a normal healthy adult may be able to endure a period of reduced calorific intake or recover from serious diarrhoea or cholera with appropriate treatment, these diseases can accelerate the onset of AIDS or increase the risk of



Many handpumps were failing not because of water scarcity but because of hardware breakdown (photo credit: WEDC/Peter Harvey)

morbidity in those carrying the HIV virus. This phenomenon weakens society's resilience and traditional coping strategies in times of stress. The problem of hunger is thus compounded, indicating a need for improvements in the overall public health environment. These complex and interrelated problems have led some to redefine the southern African crisis as 'complex drought' (USAID) or 'New variant' famine.<sup>3</sup>

### What does this mean for WatSan teams?

The effects of 'complex drought' on water and health are likely to be more indirect and will tend to lag behind the visible symptoms of food shortages, but they will be no less severe in the long run. In Malawi, for example, a comprehensive survey demonstrated that many handpumps were failing, not because of water scarcity but because community management systems are disintegrating as local safety nets disappeared.<sup>4</sup> Of over 2000 waterpoints surveyed, more than 50 per cent were found to be non-functioning because of hardware problems rather than water scarcity. This had reduced the density of functioning waterpoints in some areas to less than one per 1400 people (the SPHERE indicator for recommended waterpoint density is 1 per 250 people).

Community-based management systems devised for sustaining community resources have become particularly vulnerable as they rely on the collective

action of the whole community in order to function effectively and they must compete with other more pressing needs. The survey indicated that after two poor agricultural seasons, the disposable incomes of subsistence populations had been greatly reduced, and other issues such as food security and caring for the chronically sick had taken priority.

There is a tendency for families dealing with food shortages, and especially those affected by HIV/AIDS, to increase their consumption of assets in an attempt to combat the effects of disease and hunger and also because the prospect of an early death represents the loss of future income, thereby reducing investible resources within a community. This means fewer resources are available for water and sanitation activities.

A Malawian NGO has also found that since 1994 many village water committees have been decimated by chronic illness. Knowledge relating to pump maintenance and cost-recovery techniques is therefore being lost before it can be passed on to a younger generation. As a result, basic maintenance issues are not being addressed and community access to safe water is reduced. Many communities in this predicament are faced with travelling long distances to collect water from alternative waterpoints, which compromises time and energy, or else they use nearby unsafe sources which increases vulnerability to disease.

In these circumstances, traditional drought-relief programmes that focus on the construction of new waterpoints may not constitute the most appropriate use of funds, since water scarcity is not the problem. Drilling programmes are expensive and have a limited and slow impact rate. Instead, projects which aim to address the reasons why there are extended periods when waterpoints are out of action may be more effective at addressing both immediate and chronic needs. But these require a good understanding of the context and of other issues normally outside the area of expertise of the water engineer.

### Suggested interventions

Oxfam's humanitarian public health team in Malawi, faced with some of



As well as food relief, people need water, sanitation and hygiene programmes to combat the onset of HIV/AIDS-related illness (photo credit: WFP/Richard Lee)

the issues discussed above, took the following approach when designing and implementing a humanitarian support project.

Attention was paid to providing safe water to populations locally, with the aim of supporting populations to remain within their own environment. This should save the time people spend on fetching safe water, economize the energy levels of the sick, release more time for those caring for the sick, and allow more time for income-generating activities. A detailed but expedient survey was conducted in collaboration with the District Water Office to establish areas of need and to understand the reasons behind extended pump down-times.

Communities were then supported with handpump repair and rehabilitation projects, which included community-based management and maintenance training. As most of the waterpoints were not functioning because of hardware problems, work focused on the repair of existing water points rather than the construction of new ones.

Water sources were protected in several communities where improved waterpoints did not already exist.

In partnership with local health structures, Oxfam carried out a public health promotion campaign, focusing on cholera- and diarrhoeal-disease prevention. Local health extension workers were supported with training workshops and training materials. Material support was also given to the Ministry of Health's community

home-based chlorination programme. Including greater numbers of people in training activities helps, in part, to compensate for human resources lost to chronic illness.

Safe sanitation messages were reinforced through public health promotion at community level, and latrine-building projects were supported in health posts and schools. Water storage and treatment were improved in health centres, through the construction of simple rainwater catchment systems and by providing training in chlorination and sanitation.

Agricultural input (seeds, fertilizers and tools) distributions were supported with irrigation advice and training and the provision of minor irrigation equipment such as watering cans and treadle pumps, where appropriate, to promote food production.

Improvements in the availability of safe water, appropriate sanitation and hygiene promotion help to reduce people's vulnerability to HIV/AIDS-related infections, the early onset of AIDS and poverty-related diseases, and by doing this they increase the benefits of nutritional interventions. Throughout the emergency phase, consideration was given to linkages to longer-term development and recovery, and many of these interventions will be followed up by the in-country development programme, through its livelihoods-support programmes and advocacy and civic training to address the issues of maintenance and sustainability.

## Conclusion

The combination of the HIV/AIDS pandemic and structural and political changes leaves many people in southern Africa acutely vulnerable to physical shocks. With HIV prevalence likely to remain high for the foreseeable future and with the threat of climate change, emergency situations are likely to recur.

The issues raised above emphasize the need for integrated multi-sectoral programmes, which confront the new dimension presented by the HIV/AIDS pandemic, and address both the direct and indirect impacts on affected communities.

Water, sanitation and public health promotion activities are crucial components of such programmes, but they can often be overshadowed by more measurable nutritional support activities. Water and sanitation engineers must therefore argue for a more holistic and integrated approach rather than seeing the problem as simply one of water scarcity.

Future assistance strategies must be context specific, based on a thorough understanding of the situation, and they should ensure that both immediate and chronic problems are addressed.

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