New Tools to Assess Health Impacts of Taps & Toilets

Novel measures, such as determining the effect of carrying water on the physical body structures of children and young women are being included in the new water and sanitation toolkit.

Kathy Eales

Authorities have spent millions of Rands on improving access to safe water and sanitation in communities during the last decade. But how do we measure the improvements in the lives of the people these interventions are meant to serve? A three-year Water Research Commission (WRC) project aims to quantify just that. Lani van Vuuren reports.

The Department of Water Affairs & Forestry remains positive that South Africa will eradicate its water supply backlog by 2008 and the general sanitation backlog by 2010. An estimated 14% of South Africa's population still makes use of unsafe water resources, while 27% of the country's people still do not have access to adequate sanitation.

However, to date there has been no real way in which to measure how much of a positive impact these water and sanitation interventions are making on affected communities. "There is an urgent need to find plausible measures to quantify the benefits of water, sanitation and hygiene supply interventions, not only locally, but internationally," notes WRC Director: Water Use and Waste Management Jay Bhagwan.

Reviews of international burden of disease analyses suggest that disease could significantly be prevented through better access to safe water supply, adequate sanitation and better hygiene practices. International organisations, such as the World Health Organisation, have undertaken initiatives to provide generic methodologies to quantify the

benefits of improved water, sanitation and hygiene services. However, these methodologies, because of their generic nature, are usually based on wide ranges of assumptions that may or may not have been tested at country levels elsewhere, or in South Africa.

It is for this reason that the WRC commissioned research into the development of a set of instruments or tools to estimate the benefits of interventions related to water supply and sanitation. The University of Johannesburg's Water and Health Research Unit is leading the research project.

It is hoped that by March 2009, the team will have developed a toolkit for the South African water and health sectors which can be used to quantify health, economic, social, environmental, technical and health aspects of water supply and sanitation. It is expected that the proposed toolkit will especially assist policy makers to determine which interventions have the most economic and social value.

Water and Health Research Unit head Prof Paul Jagals explains the need to calculate the benefits of water and sanitation interventions. "It is assumed that improved water and sanitation will result in benefits for communities. But it is an assumption for which we are still trying to understand the true meaning in the real-time situation. For instance, what does 'improved' really mean when we talk about improved access? We find many situations where the initial improvement has been diluted by factors such as population growth and water and/or sanitation system degradations."

The research team is investigating the use of both conventional approaches, such as the occurrence of pathogenic microbes as well as some novel measures. The latter includes determining the effect of carrying water on the physical body structures of children and young women. Subtle indications in data from the work currently being done by the research team suggest that this may be a hugely underestimated aspect of water toil related to poor access. "The research team is being led in its search for the right measurement tools by problems expressed by South African communities themselves in focus groups, the experience of the researchers as well as what is reported elsewhere in the world," explains Prof Jagals.

He goes on to say that the greatest challenge of this project is understanding how the multi-variable data sets in the toolkit will be informing each other to come up with the required answer. At present the project is focusing on rural areas and pilot studies are being undertaken to develop and test new impact measuring tools.

It is believed that even if clear benefits can be demonstrated at the time of assessment, it remains a question whether such benefits are sustainable, and what the costs would be to keep it sustainable. It is also important therefore that sustainability measurement features strongly in the development of the measurement tools.

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Another major feature to be considered in this development is that the toolkit should be capable of serving a dual purpose of measuring impact of present and past services as well as predicting sustainability (need, maintenance, upgrading) for present and future systems. This should then enable authorities to use the toolkit to measure the impact of present and past interventions and, where needed predict future sustainable interventions.

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