

Pinpointing the Need for Water

By mapping the areas that suffer most from so-called water poverty, national authorities could identify which local municipalities to target in terms of financial and institutional support to ensure the most effective use of scarce resources. So says James Cullis, who led a Water Research Commission funded study into the subject.

Speaking at the biennial conference of the Water Institute of Southern Africa held in Durban in May, Cullis explained that water poverty refers to several components, including the physical availability of a water resource (the resource component); the extent of access of that resource for human consumption (access); the effectiveness of people's ability to manage water (capacity); the ways in which water is used for different purposes (use); and the integrity of the related environment (environment).

"Water poverty mapping combines these components with the flexibility of geographic information systems mapping and geographic targeting to provide decision makers with a policy tool that describes the spatial distribution of water poverty and the underlying causes of this water poverty within an area," Cullis told delegates.

WHAT IS WATER POVERTY MAPPING?

Water poverty mapping can be defined as the mapping of water poverty indicators aggregated to a suitable spatial scale for the purpose of identifying areas of high levels of water poverty so as to assist in the targeting of water-related policies and infrastructure to ensure the most effective use of scarce resources to meet the development objectives of the country.



A policy tool aimed at determining which areas need to be targeted in terms of institutional and financial support has been tested in a project funded by the Water Research Commission.

It is believed that at a regional or national level, the Department of Water Affairs & Forestry and other national institutions could make use of water poverty maps for strategic and regulatory purposes, such as the allocation of financial resources to local municipalities for the development of domestic water supply infrastructure or in determining the most equitable allocation of water resources between competing users in a catchment. Strategic level water poverty maps would also be useful to track the general state of poverty.

A simple water poverty map was produced of the Eastern Cape. The exercise revealed that the Quakeni Local Municipality is the most water-poor local municipality in the area. The municipality scored particularly low in terms of the capacity and environmental components. It is therefore recommended that resources should be targeted at this local authority.

"The resource and access components, while not the lowest are very low and probably the greatest area for concern," noted Cullis. "The lack

of available resource is probably due to the deficiency of storage capacity in the area, which, like to low access component, is most likely a legacy of the apartheid era funding for water supply infrastructure in the area."

It appears then that the best way to address water poverty in the area would be to consider increasing the available resource through increasing the yield and by improving the

level of service delivery in the area, reported Cullis. "It is, however, important to note that the capacity component is quite low, which could have implications on the type of service provision considered for the area. It may therefore be necessary to also ensure increased employment in the area to help fund any water supply development project. It is also important that the capacity of the water services authority to address water poverty be assessed before funding is allocated to the local municipality."

In general, the municipalities with the lowest water poverty index tend to be the predominantly rural municipalities located in the former Transkei, while those with the highest water poverty index tend to be the more urban municipalities.

- To access the report, *Water Poverty Mapping: Development and Introduction using a Case Study at the Local Municipal Scale for the Eastern Cape* (WRC Report No: TT 250/05), contact Publications at Tel: (012) 330-0340 or E-mail: publications@wrc.org.za