

## **Sand dams: African success in coping with drought**

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**Recent drought in Kenya has been declared the worst natural disaster to hit Kenya since the drought of 1971. If the long rains of March to May fail this year, it will be the worst disaster to ever hit Kenya. An estimated 3.5 million people are currently suffering the effects, especially in the northeast. Successful coping mechanisms to droughts, however, exist. A project in the Kenyan district of Kitui is nominated for the 'Kyoto World Water prize' and will be presented at the 4<sup>th</sup> World Water Forum in Mexico. The study shows that despite the recent drought, water is available through clever groundwater management techniques. In ten years time, these techniques called 'sand dams' have provided water to 100,000 people at the cost of US\$ 35 per person. The Sand dams have significantly increased economic growth in the district.**

The Millennium Development Goals Local specifically address storage of water to adapt to global changes such as population growth, climate change and land degradation. For rural communities, however, large water storage projects are generally too costly and complicated. Provisions for communities require low cost systems with easy maintenance that can be constructed and operated with a high degree of community involvement. These methods have been applied and used since ancient times in arid and semi arid regions. Since local communities are traditionally familiar with such methods, development and maintenance need relatively little training and investments. Therefore, they are increasingly seen as robust adaptations to e.g. climate change.

The Kitui Sand Dam project is an example of how communities use their knowledge about water to cope with droughts. Since 1990, a local NGO in Kitui (Sahelian Solution foundation, SASOL) assists local communities in building small-scale sand dams to store water in artificially created sandy aquifers. This is an old technique that differ from traditional dams by storing water within the sand and gravel particles accumulating against the dam. Hence, the term 'Sand' refers to the sand behind the dam that holds the water. The dam itself is obviously made of concrete. Sand can store up to 35 percent of its total volume as water. This water is captured for use through an ordinary well or tube well that is dug into this storage material. In this way, the stored water is protected against high evaporation losses and against contamination..

The sand dams are a success. Scientific research shows that 100,000 people have access to safe drinking water at an investment of 35 US\$ per person. The walking distance for collecting water has been decreased from 4 to 1 kilometers on average. This means that especially women have more time for other economic activities and education. The dams are built by the communities and SASOL only facilitates fund raising for the dam materials and the engineering. That's why the communities are committed for maintenance and efficient use of the dams.

The question is how to upscale this success to other regions? The sand dams show that communities can adapt to drought such as currently present in Kenya. International organizations should take up this example, which shows that local knowledge is a cost effective way of coping with droughts.