



## **Adaptation to droughts: Developing community based sand dams in Kitui, Kenya.**

**R. Lasage** (1), S. Mutiso (2), G.C.M. Mutiso (2), E.O. Odada (3) J. Aerts (1)  
and A.C. de Vries (4)

(1) Institute for Environmental Studies, Free University, Amsterdam, The Netherlands, (2) SASOL, Nairobi, Kenya, (3) University of Nairobi, Nairobi, Kenya, (4) ACACIA institute, Amsterdam, The Netherlands (ralph.lasage@falw.vu.nl / Fax: +31 20-5989533 / Phone: +31 20-5989506)

The ADAPTS program aims at finding local level adaptation strategies in water policies that, apart from alleviating impacts from climate change, also assure food production, sustain people's livelihoods and ultimately contribute to rural and urban poverty alleviation. One of the ADAPTS pilot areas is located in Kenya within the district of Kitui, 150kms east of Nairobi. During the last 10 years, a local NGO called 'SASOL' has implemented a methodology to mitigate droughts by developing so called 'sand dams'. These dams are constructed in a cascade in ephemeral rivers, which contain water during two wet seasons. A sand dam is designed such that water is stored in the sand that is kept behind the dam as an artificial aquifer. In this way, evaporation losses are limited, the quality of the water is unaffected and water can be extracted from the sand in the dry season using wells.

A sand dam costs about US\$ 5000 in materials and are built through community inputs. SASOL has developed 435 dams in ten years time which have provided safe drinking water to about 60,000 – 65,000 people at an investment of about US\$35 per capita. The average walking distance to water per capita (one of the prime targets of the Kenyan government) has been reduced dramatically and as a result, other economic activities have been started diversifying the income base of families. In general, the increased availability of water boosted agricultural production of the region and has significantly helped communities adapting to unfavorable climate conditions.

Through the success of the project, up scaling to other regions is currently being dis-

cussed. However, some issues need to be addressed before up scaling can effectively be implemented. This research provides directions to these issues, which are:

- Evaluating the potential for developing so called ‘Sand dams’ as a local adaptation to cope with climate events such as droughts by performing a socio economic assessment of the effects of sand dams and link these to physical characteristics of the water resources system.
- Identifying vulnerabilities to climate change in the Kitui water sector.
- Assessing institutional requirements for monitoring, maintenance and management of sand dams and search for opportunities for up-scaling local knowledge to the national level