



PHOTO: Women fetch water from sand dam

## Water Access

### Sand Dam Technology Saves Village

For the past decades, the Ngalange community of Tseikuru District in Kitui County have been severing hard times due to lack of water for our domestic use and livestock.

The community relied on rain-fed agriculture and seasonal rivers for domestic and livestock water sources but the recurrent erratic rainfall had drained their water reservoirs leaving the community in dire need.

Women and children thus walked for seven kilometres to fetch water at River Thiitu, consuming the very productive hours that could be spent in farming and other sources of livelihood. This increased the poverty levels and the parents could not pay their children's school fees leading to a high rate of school drop-outs.

In addition pupils were denied prep time since during the evening hours they supplemented the household chores that were left unattended.

In a bid to alleviate the situation, the community joined in 2005 and formed Kwa Ngola Self Help Group.

United by a common challenge, lack of water, they initiated projects to alleviate the situation. Later on, the Anglican Development Services Eastern Region facilitated the construction of Kalamani Sand dam by providing cement, steels materials and a qualified mason. The self-help group members helped in the collection of materials such as ballast, hardcore and water as well as manual labor.

A sand dam is build on and into the riverbed of a seasonal sand

river. During the wet season, surface runoff and groundwater recharge within the catchment. When the riverbed aquifer is full, usually within one or two large rainfall events, the river starts to flow as it does in the absence of the dam. However, the groundwater flow through the riverbed is now obstructed by the sand storage dam, creating additional groundwater storage for the community.

“We are very happy because the water levels are high and we are scoping less than a feet in the sand to get water. For domestic use and for our shoats,” remarks Mueni a member of the group.

During the dry season, water levels will drop due to abstraction of water, minor evaporation and possibly by leakage through the dam or vertical leakage into the bedrock. Some water is trapped underneath thus available when sand is scooped.

Apart from drinking water security, sand storage dams also provide water for development of rural commercial activities such as small scale irrigation of cash crops and tree nurseries and water supply to nearby homes. Furthermore, since less time is needed to fetch water school attendance increases significantly and more time can be spent on other income generating activities.

The beneficiaries, majority who are widowed and sole bread winners have focused their time on micro-enterprises. “I can attend the merry-go-round meeting and sell chicken in the Tseikuru market to cater for my household needs,” says another lady.

Sand storage dams have several important advantages over surface water dams, among them higher water quality, protection against evaporation, reduction of contamination by livestock and other animals, filtration of water flowing through the riverbed sand and unsuitability for breeding of mosquitoes (malaria) and other insects.