

# Kenya Sand Dams

## Local adaptation to Global Climate Change

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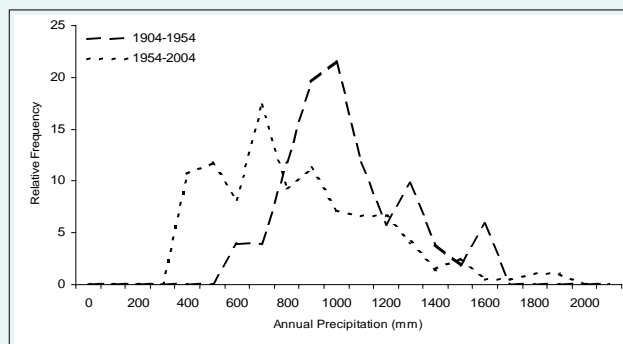
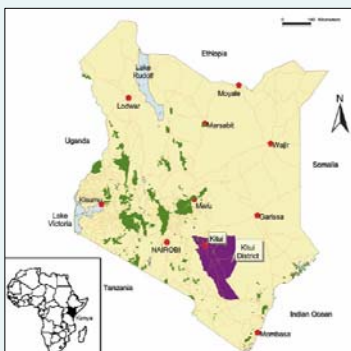
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### KITUI DISTRICT KENIA



- Semi-arid region, 150kms east of Nairobi.
- About 65% of the population lives beneath the poverty line of US\$2 a day.
- 50% of the inhabitants of Kitui received food aid in 2004 and 2005.
- Especially women walk up to 15 kilometers to collect water.

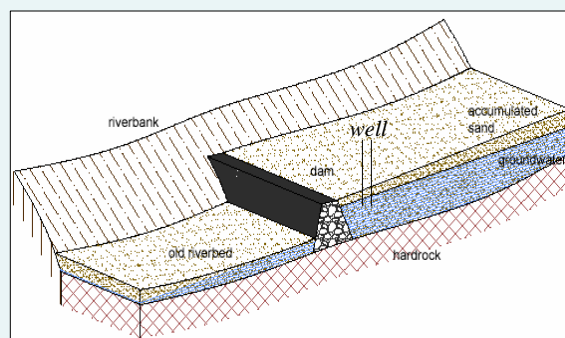
### CLIMATE CHANGE



Climate change is already an issue in the Kitui district. The frequency of years with low annual precipitation has increased in the period 1954-2004 compared to 1904-1954. Future climate change will increase the frequency and severity of droughts (IPCC 2001).

### SAND DAMS: COMMUNITY BASED ADAPTION

- A NGO (SASOL) has developed 480 Sand Dams with the community to adapt to droughts.
- The sand dams store water within the sand particles that accumulate against the dam. This sand can store up to 35 percent of its total volume as groundwater.
- In this way, the stored water is protected against high evaporation losses and contamination.
- This water is captured for use through a hand dug well or tube well that is put into the sand in the dry season.



### A SUCCESS STORY!

The sand dams are evaluated on physical and socio economic effects. It appears the sand dams are hydrological effective and a socio-economic success. In 10 years time, **100,000 people** have access to **safe drinking water** at an investment of about **US\$ 35 per capita**. The walking distance for women for collecting water has decreased providing more time for education and other economic activities (Rempel 2005; Lasage et al 2006).

#### Socio-economic performance

Vulnerability categories	Vulnerability indicators	Before Dam construction	After Dam construction
Agriculture	# of cash crops	1.5	2.8
	% irrigated crops	37	68
Special aspects	Water collection Domestic (minutes)	140	90
	Water collection livestock (minutes)	110	50
Gender	Average walking distance Woman to water (kms)	3	1.0
Economic	Income (US \$ year)	230	350
Health	% households suffering from malnutrition	31.6	0

### COMMUNITY COMMITMENT



The dams are planned and constructed through community inputs and investments (45% of the total construction costs), resulting community ownership and commitment to maintain the dam.

### WHAT'S NEXT? UPSCALING & TRANSFER

- Monitoring of existing dams.
- Knowledge transfer and exchange.
- Implementation: Sand Dam pilots in other countries.

### CONTACT

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