

Title	Improving Soil nutrients and Water management to increase crop yields for enhanced livelihoods of small scale farmers in Semi-arid eastern Kenya.
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Purpose	The broad objective of the study is to enhance adoption and application of improved, efficient and cost-effective water and nutrient management technology to improve food security and livelihoods of small scale farmers in the semi-arid eastern Kenya.
Project Summary	Food insecurity is a big issue in Kenya largely because more than 80 % of the land is arid to semi-arid. There is therefore urgent need to put into practice the existing technologies to spur food production in semi-arid fragile ecosystems. This study will investigate the effect of trapezoidal bund technology on soil moisture storage and retention in soils, predict impact of soil available nutrients and use of farmyard manure on crop yields and long-term soil fertility maintenance, and quantify microbial biomass and nitrogen mineralization potentials in soils. The project will be carried out at Gachoka in Embu District. Trapezoidal bunds for run-off water collection and storage will be constructed. Plots measuring 4.5 m× 4.5 m will be used for the treatments where maize and cowpea will be the test crops, and manure and NP fertilizers as source of plant nutrients. Neutron moisture meter and tensiometers will be used for soil moisture data collection. Treatments will be factorial and randomized in a complete block design. The data will be subjected to analysis of variance and regression. Nutrient use efficiency and gross returns will be calculated
Country and Specific	Gachoka in Embu, a region in semi-arid eastern Kenya.

Location(s)	
Participating Institutions	Farmers, University of Nairobi
Start Date	September, 2010
End date	October, 2012
Amount of Funding	USD 60,000