Tropentag, September 16-18, 2015, Berlin, Germany

"Management of land use systems for enhanced food security: conflicts, controversies and resolutions"

Disseminating Efficient Irrigation Technologies: The Egerton Campus Experimental and Demonstration Site

Andrea Dührkoop[1], Edward Muchiri[2], Oliver Hensel[1]

[1] *University of Kassel, Agricultural Engineering, Germany*
[2] *Egerton University, Civil Engineering, Kenya*

Abstract

Within the frame of a joint research project between African and German Universities and research institutions with focus on sub-surface irrigation an experimental and demonstration site for comparing sub-surface irrigation methods in terms of water productivity, yield and impact of different water qualities was installed in 2014 at the Egerton University campus in Kenya.

A first farmers' field day was organised in December 2014 where local farmers, administrations from county water authorities and church support unions where invited to the University Campus in Njoro / Kenya. With great interest and fruitful discussions the invited group had a guided tour to the demonstration site where sub-surface irrigation techniques were installed in a greenhouse and in open field.

The techniques comprised clay pot irrigation, sub-surface drip irrigation, irrigation via plastic water bottles and innovative membrane irrigation, representing a wide range of sub-surface irrigation methods currently used in Kenya and worldwide. Their common features are installation beneath soil surface and water supply directly in the plant rooting zone. These main advantages lead to water savings up to 70 % in comparison to surface irrigation. All applied sub-surface irrigation techniques operate with low pressure provided from water tanks near by the plots, and can be easily adopted by local farmers.

A next project step is conducting a workshop with local farmers to disseminate installation, operation and maintenance procedures of sub-surface irrigation techniques and water harvesting methods.

The described demonstration site will also be used for research purposes to compare the installed sub-surface irrigation techniques in terms of water consumption, yield and water use efficiency. Resulting data will be available by the end of 2015.

All activities are coordinated by the Kassel University, Department for Agricultural Engineering in the frame of the ComASI project - A Comprehensive Analysis of Sub-surface Irrigation in SSA for an optimisation and adoption of an environmental friendly irrigation practice - financed by the German Federal Office for Agriculture and Food (BLE) as part of an ERA-ARD (European Research Area for Agricultural Research for Development) program.

Keywords: Demonstration site, dissemination, efficient irrigation, sub-surface irrigation

Contact Address: Andrea Dührkoop, University of Kassel, Agricultural Engineering, Nordbahnhofstr.1 a, 37213 Witzenhausen, Germany, e-mail: andrea.duehrkoop@uni-kassel.de