



Strategies to adapt to climate change in the Central Rift Valley of Ethiopia: Linking regional drought stress patterns to on-farm water management.

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Impact of climate change will fall disproportionately on the world's poorest countries, many of them in Africa. Ethiopia will be severely affected, because food security is dependent on rain-fed agriculture and under the current climate, it is already under pressure from natural disasters such as drought. To predict effects of climate change at farm level in the Central Rift Valley (CRV) in Ethiopia, the expected decrease in precipitation pattern need to be known also at farm level. Farmers in the CRV mention the influence of local forests on rainfall distribution and drought, so these effects need assessment as well. Opportunities to adapt to less rain lie in an improving the water availability for crops by rainwater harvesting. Local technologies include (simple) terracing and supplementary (deficit) irrigation using farm ponds. However, these technologies are seldom combined; and our hypothesis is that their combination will lead to efficient agricultural intensification. Major patterns of drought stress and their frequency occurrence will be assessed using climate data and GIS&RS. Water-use efficiency at the plant and field level in rain-fed situations and in terrace/pond combinations will be assessed using FAO's AquaCrop model and the combination technology experimentally tested on-farm in a participatory way.

Key words: climate change , Ethiopia, Central Rift Valley, Adaptation, Drought, water management