

**Impact of climate change, and human activities on the availability
of surface water: a case study of Rombo District**

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Impacts of climate change and human activities on the availability of surface water in Rombo District were assessed. Three villages (Aleni Chini, Shimbi Kati and Shimbi Mashariki) which lie in the lower drier areas of the district were selected. Secondary data were collected through literature and documentary review. Primary data were collected through interview with key informants, focus group discussions, household questionnaires and field observations. For all villages, a sample size of 5% was selected. Data coding and analysis were performed using the Statistical Package for Social Sciences (SPSS) software. Rainfall and temperature over 30 years were analyzed using Microsoft excel. The study found that the availability of surface water in Rombo District had decreased over the past 30 years. Decrease in the amount of surface water was associated with various factors. One of the factors was climate change. About 90% of the respondents (questionnaire based) said that surface water had decreased due to climate change. Also, it was revealed that 88.8% of respondents reported that rainfall variability cause reduced surface water and hence drought. On the other hand, human activities was another important factor where about 89.5% of the respondents were involved in agriculture, which together with settlements, was reported to account for deforestation, hence leading to changes in surface water. Cutting of trees and frequent bush fires were also reported to have caused drought hence unavailability of surface water. In order to deal with reduced and unavailability of surface water, the community buy water (67.5%) and plant crops that require little rainfall/water (93.8%) as coping strategies whereas harvesting rainwater (81.3%), building reservoirs and/or artificial wells (34.4%) and environmental conservation such as planting trees (13.0%) are some of the adaptation strategies applied. Since there is little education on conservation education, the study recommends that education on ecosystem conservation for overcoming water shortage should be implemented. Also efforts to avoid deforestation need to be strengthened and/or put in place. Furthermore, more reservoirs should be constructed in order to reduce the problem of surface water unavailability in Rombo District.