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# Hydrological analysis for the eastern arc mountain in North Eastern Tanzania

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**Hydrological analysis for the eastern arc mountains in north eastern  
Tanzania**

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Inter annual variability is investigated for flow and rainfall stations in the Pare and Usambara Mountains. The analysis is undertaken to investigate the possible impact of declining forest on the river flow regime. Interannual variability of annual amounts of streamflow and rainfall were investigated using change point and linear trend analysis. The study has shown the changes in both rainfall and streamflow. The changes in the rainfall indicate a predominant decrease in the both the mean and the extremes events. Results in streamflow indicate a noticeable decrease in mean annual flow around 1990, and a less significant pattern of increases in mean annual flow for the station with data ending in 1980s. In addition, the changes appear as a gradual change rather than a step change. Differences in trend direction in the rainfall and streamflow extremes values suggest that the changes in the flow may be due to the modification of the land cover/land surface as a result of human activities in the forest such as clearing forest for domestic purposes or for agricultural activities.