

Factors affecting the effectiveness of internal audit function in local government authorities in Tanzania: The case study of Kilimanjaro LGAs

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Great Ruaha is one of the important rivers in Tanzania for irrigation and hydropower production. The expansion in agricultural activities are reflected on the increased land use transformations and the drying up of the Great Ruaha River, this lead to not only social conflicts between upstream and downstream users but also a denial adequate water to sustain the fragile ecosystem in the Ruaha National Park (Kadigi, 2004). In this study the Suitability of the SWAT model for assessing the impact of land use change in stream flow is investigated. The data used is time series data Rainfall, temperature and other climatic data and spatial data (land use, soil and DEM data). Sensitivity analysis of the distributed model parameters for the period (1976-1983) showed the most sensitive parameter is curve number (CN). The observed daily average flow result from the long term water balance is 58.85 cumecs and the simulated is 59.74 cumecs. The calibration and validation at the outlet of the catchment using distributed model parameters showed there is a satisfactory correlation of ($R^2=0.73$, $NSE=0.72$ and $IVF=0.97$) and ($R^2=0.54$, $NSE=0.5$ and $IVF= 1.13$) respectively, between the simulated and observed daily flows. The results show that the model can be used to simulate the hydrological processes of the catchment. When lumped parameters were used to simulate the streamflow the results showed that there is no significant change in the performance of the model in simulating the streamflow as compared to distributed model. This shows that the model cannot capture the small variation in the land cover.