

Assessment of Low Flows Upstream of Nyumba ya Mungu Reservoir in Pangani Basin

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The main objective of this study was to assess the low flows in the upstream of Nyumba ya Mungu reservoir. In order to achieve this, low flow studies were carried out using seventeen gauging stations. Low flow statistics and indices were derived. FIO'W duration curves and low flow frequency curves were grouped (pooled) using regionalization techniques. Regional predictive equations were developed to estimate such low flow measures and indices, i.e, the ten day Mean Annual Minimum (MAM (10)), one day flow exceeded seventy percent of time (Q70(1)). The results of the study will provide the possibility to estimate low flow parameters at ungauged sites for the purpose of determining waste-load allocations, siting treatment plants, abstraction licensing, fishery management and river channel design, and possibly for the purpose of determining the minimum downstream release requirements from hydropower, irrigation, water supply and cooling plant facilities.

