

To assess the potential of electrical energy, water availability in the stream under consideration directly an average climatic condition has to be established. The variation of water availability is derived from the flow duration curves, Normally 10 to 30 years of daily stream flow data are required to develop a reliable flow duration curve.

Flow duration curves can be developed for larger catchment as measured hydrological data are available, but such measured data are rare in small catchments. Mini hydro power sites are normally located in small catchments and most of their catchments are not gauged.

This paper presents the methodology to be adopted to develop a flow duration curve for an ungauged catchment. Catchment Rainfall ratio method and Simultaneous measurements method are discussed in this paper. The Catchment- Rainfall ratio method can be applied if daily discharge measurements are available for 10 to 30 years at a gauging station in the same catchment or in a neighbouring catchment with similar hydrological characteristics.

Their Characteristics similarity in climate, land use topography and geology. After estimating average annual rainfall and catchment areas of the ungauged and the gauged catchments, the discharge in the ungauged catchment at a particular time can be estimated.

In the Simultaneous measurements method the simultaneous discharge measurements should be carried out in the gauged catchment and in the ungauged catchment for few days, preferably once fortnightly. About ten pairs of measurements will be sufficient to find the relationship between the two stations. From this relationship flow duration curve at the gauged catchment can be transformed to a flow duration curve at the ungauged catchment.