

ASSESSMENT OF SEDIMENTATION IN MAJOR RESERVOIRS OF HARD ROCK TERRAIN IN INDIA

Dilip G. Durbude
National Institute of Hydrology
Roorkee

ABSTRACT

Reservoir sedimentation is one of the principal factors, which threaten the longevity of reservoir functionality, for which it is constructed. It reduces the storage capacity of the reservoir and their ability to conserve water for various intended purposes. Hence, the periodic investigation is necessary to arrive at a realistic siltation index for planning of future reservoir projects in the basin. The conventional techniques of sediment quantification in a reservoir are cumbersome, costly and time consuming. With the advent of remote sensing techniques, it has become very cheap and convenient to quantify the amount of sedimentation in the reservoir. Therefore, the Working Group constituted by the Government of India for the National Action Plan for reservoir sedimentation assessment recommended the satellite remote sensing based sedimentation assessment of major reservoirs in the country. The present study is a part of this plan. In this, the assessment of the sedimentation in major reservoirs of hard rock terrain was carried out using digital image processing technique. The remote sensing data acquired for various dates were analyzed for estimating the reservoir water spread area as well as computing the capacity of reservoir. Based on the analysis, the sedimentation rates come out in the range of 0.5 to 8.55 ha-m/100 sq.km./year. The reasons behind the more rate of sedimentation than the design rate and the influencing factors were also discussed along with the precautionary and remedial measures required to initiate for further enhancement in the rate of sedimentation in the reservoirs.