

5.2.7.2 (g) Reservoir Management

(i) Silting

Loss of capacity due to the deposition of silt in a reservoir may impair, if not destroy, the usefulness of the reservoir in a few years. It may be minimised by proper site selection, erosion control, reservoir operation and desilting works. The reservoir site may preferably be chosen on a non-silt bearing stream, or the reservoir may be located in a basin off the main channel so that heavily silt-laden waters may be by-passed around the basin. Reservoirs should be located on the smallest drainage area possible. The rate of silting (hectare metres per year per sq. kilometre) under Indian conditions varies from 0.1 to 0.2.

After silt has been deposited in a reservoir, there is no practicable method, widely applicable, for removing it other than to operate gates in the dam to flush out the silt to some extent at times of high stream flow. Dredging is expensive and the disposal of the dredged material presents a serious problem.

Soil erosion and control are closely related to the silting of reservoirs since without erosion there would be no silting. Erosion prevention methods recommended for soil conservation include proper crop rotation, ploughing on contours, terracing, strip cropping, protected drainage channels, check dams, reforestation, fire control and grazing control.

Hence it is necessary to provide for silting capacity for all impounding reservoirs, based on studies or data pertaining to similar catchments.