

# **Sedimentation and Desiltation of Minor Tanks**

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MINOR TANKS in the dry and intermediate zones of Sri Lanka are mostly rain harvesting earth structures capable of storing runoff from upstream area to provide irrigation water to the immediate downstream land. Centuries old irrigation works of this nature have undergone various changes in their geometry not only due to rehabilitation activities but also due to the sedimentation process. The magnitude of sediment deposits in these tanks sometimes exceeds one third of the original capacity. The rate of sedimentation appears to be high in recent years due to increased farming activities in the tank catchments.

Tank water balance studies carried out in the Nachchaduwa Watershed indicate that the tank water losses due to evaporation, seepage and percolation are higher than the actual amount used for irrigation. Half the storage is lost during a period of 3 to 4 months showing the low efficiency of tanks as water conservation systems. The rate of loss increases linearly with the area/height ratio of the water body. Tank renovation programs which had no desilting activities have increased area/height ratio in most of the tanks and paved the way to increasing tank water losses.

A partial desisting technique is proposed in this presentation with the objective of reducing tank water losses and saving a portion of the tank bed area which can be subsequently utilized for agricultural purposes. In this technique, the closer portion of the tank bed is excavated and the removed sediment is spread over the other portion. The desisting design can be worked out after carrying out tank bed and sedimentation surveys. Economics and other implications of this approach have yet to be studied.

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