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Abstract Title:

Reservoir Sedimentation: A Case study of India

is part of the Paper Session:

[Asia Symposium: Analytical Methods for Research linking economic, climate, hydrology and policy](#)

scheduled on Tuesday, 3/29/2016 at 8:00 AM.

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Abstract:

Storage reservoirs and dams will continue to play an important role in the development and management of water resources. These are designed to serve various purposes. Reservoir sedimentation due to dam construction leads to the reduction in the storage capacity, which, in turn, can significantly impair the capability of a dam to perform its function and the reservoir sustainability. The problem of sedimentation is universal and is going to be a major concern in the coming decades globally and calls for careful consideration. Proper allocation and management of water in a reservoir, therefore, demands for periodic assessment of its capacity. In this case study on India, a database of around 200 reservoirs is built. The rates of sedimentation by geomorphic regions from measured reservoir sedimentation rates determined mainly through hydrographic surveys and remote sensing techniques are considered. The spatial distribution of sedimentation characteristics for each dam is presented by using geographic information systems (GIS). To capture the regional variation in sediment yield, the geomorphic regions defined on the basis of similar hydrometeorology, physiography, geology, and vegetation are used. The relationship between the loss in capacities and catchment characteristics is examined using GIS and statistical analysis. It is revealed that the rate of sedimentation is linearly correlated with size of drainage area. Multiple InfoWindows, the most useful aspects of Google Maps, are created for all important reservoirs under study. This study provides direct information for policy makers to do the best management on dams for ensuring the sustainability of water resources.

Keywords:

[Geographic Information Systems \(GIS\)](#), [Google Maps](#), [InfoWindow](#), [India](#), [remote sensing](#), [statistical analysis](#), [sustainability](#), [life span](#); [dams/reservoirs](#), [sedimentation](#)
