

Dynamics of Lake and Groundwater

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Soils and forests are deteriorating; grazing lands are degraded; water points, sources and lakes are drying, and underground water levels are lowered. This could largely be attributed to the employed traditional inappropriate resource management methods; severe soil erosion and degradation reducing infiltration and resulting in sedimentation of water sources and lake basins. Bad cultivation practices, burning and cutting of perennial vegetation, overgrazing and grass fires increase the runoff causing soil erosion and consequently sediment transport to the lake resulting to decrease its storage capacity and quality of stored water.

The present investigations also include the runoff-rainfall studies combined with estimation of sediment transport, pollution of water and rating decrease in storage capacity. The lake discharge has been decreased according to preliminary analysis. The main aim of this research is to quantify the interactions between groundwater and surface water. A multi-disciplinary approach will be used to quantify interactions between groundwater and surface water in the catchment. The methods include modelling, isotopes, hydrochemistry, hydraulic, and temperature approach. These methods will be applied at various spatial and temporal approach. With the help of different GIS/Remote Sensing equipment's, different maps and imageries will be developed and further investigation will be done to evaluate the present mode of land situation and its degradation. Hydrological data and other related data will be collected from the different sources. Analysis of soil samples for different physico-chemical properties and water sample for testing its quality will be done by standard procedures and methods.

The status of land and water surface will be counter checked by ground truth. The results will provide a solid scientific basis on integrated approach of groundwater and surface water. Moreover, depending on the analysis and result, suggestions can be made for adopting some strategies to improve water resource management.

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