



## A Case Study

# Monitoring and modeling of Baghin river basin part of Uttar Pradesh using remote sensing and GIS techniques

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### Summary

The study of satellite images topographic maps supported by ground truth survey revealed that the study has a network of interlinked subsurface fractures. In according with the nature, potential and problem with the bet amount of interference, watershed management approach is aimed to make entire development. For surface water resources and ground water resources, the proper evaluation of water potential helps in additional exploration at optional level. The river basin objective of watershed management involves geological, hydrological consideration and economic, political, financial aspect. For the formulize of proper management program, a reliable and up to date information about various factor viz., size and shape of river basin, topography, soil, slope, elevation and their characteristics, land use/land cover, drainage parameters etc. are required. To obtain a synoptic view of respective coverage, Remote sensing and GIS techniques provide a powerful input media, unbiased reproduction of the natural features in the form of photography/ imagery and their by economizing the process of multi-disiplinary approach for planning and decision of land and water resource in a watershed for integrated development. Resource information system is makes in a stabile GIS environment for the selected area. In this system evolves a subsistence plan for optimum development of the water resources and for finding solutions for different management problem related to natural resources.

**Key words :** Remote sensing, GIS, GPS, DEM, Land use, Modeling, Water resources, Slope

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## Introduction

Recently there has been overall development in various fields such a agriculture, industry and urbanization in the Asian countries particularly in India. This has lead to increase in the demand of water supply which is met mostly from exploration of ground water resources. In hard-rock semi-arid terrain that occupies almost two-third of India, ground water is the largest fresh water resource. The purpose of present study search to the probable sites of buried and abandoned channels in the inter-drainage areas to provide a complete hydrogeomorphological picture of the area. For a proper visualization and study the influence of subsurface configuration and its effect on the geological and hydrogeological status of the area, a three dimensional picture is essential. The use of spatial analysis,

DEM for 3D visualization and terrain draping, slope map, thematic map overlays can be very helpful in the interpretation of remote sensing data. Since, most of the geological features extend deep down into the earth, as well as across it, the three dimensional spatial nature of geological features needs special attention. The subsurface morphology of the basin and the tectonics are the factors, which influenced the sedimentation pattern and guided, the channels of Yamuna river system.

Water in the basin arrives in the form of precipitation a part of the hydrologic cycle. Some precipitation returns to the atmosphere, having been intercepted by vegetation and evaporated from the surface of level and branches. More is lost to evaporation from the ground surface and transpiration by plants. In arid and semi-arid climates all of the precipitation may be consumed in this way of the most way of the time,