

**STATUS OF GEOLOGICAL MAPPING IN PAKISTAN & MINERAL MAP OF  
PAKISTAN;  
A TRANSFORMATION FROM PICTORIAL REPRESENTATION TO  
GEODATABASE MANAGEMENT**

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**Abstract**

Geological Survey of Pakistan is currently working on a project titled “Status of Geological Mapping in Pakistan & Mineral Map of Pakistan - A Transformation from Pictorial Representation to Geodatabase Management”, owing to growing demands for both pictorial as well as digital information pertaining to the present and the future geological mapping and mineral potentials of Pakistan which are steadily, sometimes abruptly, increasing in the recent past especially after the introduction of CPEC in Pakistan. Consequently there has been a growing realization for carrying out a more centralized, elaborated and accelerated programme of geological mapping and mineral exploration in the country. This first-of-its-kind compilation work involves development of a centralized geodatabase using data integration, by means of GIS and Remote Sensing techniques, of previous geological and mineral exploration literature of Geological Survey of Pakistan. The geodatabase for map showing status of geological mapping mainly includes the fields like toposheet number, province, district, map title, authors, year of publication, scale of map, area of toposheet, hyperlink to other related maps/reports/field photographs/satellite imagery and so on. Similarly, the geodatabase for Mineral Map of Pakistan includes mineral name, province, district, locality, toposheet number, reserve tonnage, mineral genesis, structural control, metallogenic zone, associated minerals, host rock, age of the host rocks, mining status, recommendations and so on. Data compilation, being the first step involved the incorporation of previous published data of GSP in the form of geological maps, mineral maps, reports etc., data rectification is further performed in which the incorporated data is rectified using GIS and remote sensing techniques. Data analysis is the best part of this project. Further data integration and geospatial analysis is applied on this developed geodatabase will ultimately help in detailed study of the lateral extension of known mineralization along with a systematic investigation of the regions which are still unexplored or inaccessible. As the regional geological mapping is always a prelude to systematic mineral exploration, the mapping data shown on the status map and the geodatabase developed at the backend will facilitate in proper understanding and critical appreciation of the strategy and priorities of mapping adopted by the GSP in the last seven decades and in the targets set for achievement during the next work plan. Yet, the GSP is incorporating its own geological data in the database, after its completion, the GSP will collaborate with other organizations, like provincial-federal mineral departments, academic institutions, independent researchers etc., to develop a centralized and an integrated database to better assist the mobilization of natural resources for betterment of the nation.