Preface

A very important natural resource, groundwater supports many facets of human life, economic growth, and biological diversity. Consistent warmth, extensive availability, great quality, reduced vulnerability, low development costs, and drought resistance are just a few of its many intrinsic traits that make it dependable. Groundwater, which makes up 97% of all liquid freshwater usable by humans, makes up around 22% of the freshwater on Earth. In India, about 30% of the urban population and over 90% of the rural population both rely on groundwater for residential and drinking purposes. Studies of groundwater are essential for locating prospective zones, keeping track of them, and conserving this precious resource. Remote geo-informatics technology has evolved as a valuable tool for evaluating, monitoring, and managing groundwater resources, in contrast to traditional approaches like test drilling, which are expensive, time-consuming, and need specialised labour. Groundwater indicators such as geology, landforms, soils, land use/land cover, and surface water bodies can be found by interpreting satellite data. Delineating groundwater potential zones has been achieved using geoinformatics approaches and multidisciplinary data. The hard-rock terrains were the main focus of these research, which were mostly undertaken in India. They made use of thematic layers like lithology, geomorphology, drainage pattern, lineament density, soil, and topographic slope. In-depth research has been done on the uses of geo-information in groundwater hydrology and prospecting.