

## Geodiversity and Its Management in India: Long Way to Go

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The term Geodiversity was originated as a counter part of biodiversity that implies the abiotic heterogeneity of planet earth. It includes a variety of geological, geomorphological, pedological and hydrological processes and their resultant diversified landforms. Recently, it has become a well established fact among the scientific community that geodiversity has impact on biological diversity and supports a range of geosystem services. Apart from these services, it may play a pivotal role in achieving the sustainable development goals and may also be used as a surrogate in conserving biological diversity through a newly invented approach named Conserving Nature's Stage (CNS). Hence, the concept of geodiversity is now well recognized even by international organisations like UNESCO and IUCN. Presently, the most sustainable way to promote and conserve geodiversity is Geopark creation that has been supported by UNESCO since 2004 and the same concept was designated as UNESCO Global Geopark in 2015. UNESCO defined geoparks as single, unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development. Besides geological importance, geoparks may also have archaeological, ecological, economical, historical and even cultural significance. Geoparks not only provide onsite protection to the globally important geological sites under its jurisdiction but also provide financial benefit to the local community of that region through geotourism. Another major advantage of UNESCO Global Geopark is its bottom-up approach that provides empowerment to the local community in policy making and application. Presently, there are 177 UNESCO Global Geoparks in 46 countries all over the world (as of 20<sup>th</sup> April, 2022). Among them, 41 are located alone in China. But unfortunately, India still does not have any single Global Geopark in its territory in spite of having almost all types of major geological rock formations that date back

from the Pre-Cambrian era to the recent Quaternary period associated with diversified geomorphological landforms, from picturesque glacial valleys and snow-covered mountain peaks to extensive deltaic plain associated with mangrove swamps, group of volcanic and coral islands, hot rocky-sandy desert, intermontane valleys associated with spectacular lakes, waterfalls and so on. Moreover, India has a number of fossil parks that are associated with a wide variety of fossils and most of them are rare and unique. But, these sites are continuously being deteriorated by several unwanted human activities in different parts of our country. In India, most of the people are unaware of the importance of geodiversity sites and we also do not have any legal protection for them, these causes are the main culprits for such adverse situations. Here in India, there are some laws to protect as well as conserve both cultural heritage and biological diversity but on the other hand, there is no law to protect and conserve geodiversity yet. Geoconservation has always been overlooked in our country. As a result, while other countries are moving forward in this regard, India is lagging behind. Although, Geological Survey of India (GSI) has enlisted 34 geological sites in our country (as of 20<sup>th</sup> April, 2021) as National Geological Monuments (NGM) for conservation and promotion of geotourism in those areas but at the same time the organisation also becomes helpless owing to absence of any law for their protection. Several important geosites in our country are continuously being vandalised in the name of tourism and developmental activities without having any legal protection and proper management. Therefore, first of all, there is an urgent need to enact and enforce a comprehensive law for the protection of these sites and secondly, more emphasis should be made for their sustainable promotion through geopark creation that will not only help to sustain a balance in natural diversity but also will enhance the economic prosperity of our country.