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## **Geopark and geotourism development in the Sikkim Himalaya, India**

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The Sikkim Himalaya, in NE India, has a vast potential for geopark and geotourism development along the Teesta and Rangeet river valleys. The geology (structure, stratigraphy and geomorphology) of the Sub-, Lesser and Higher Himalaya is highly interesting, and significant geological features must be preserved and developed as geological and fossil parks. Some very important and geologically significant sites in the South Sikkim Lesser Himalaya need to be preserved immediately and developed as geoparks since these are located very close to the ongoing and proposed new hydro power projects, road constructions and other developmental civil constructions.

The Meso-Neoproterozoic stromatolites are very well preserved in the Buxa Dolomite Formation in the Rangeet river valley near Tatapani village [1, 2], and along the road from Tatapani to Reshi, and Namchi town to Mamley village. The stromatolite fossil park may be urgently developed at Tatapani and Mamley to preserve these rare evidence of early life and its evolution on planet Earth from the eastern Himalaya in the south Sikkim [Fig. 1, left].

The other equally important evidence of Permian glaciation is also well preserved at Tatapani, where large Gondwana Ranjeet Boulder Beds (glacial diamictites) clearly indicate past evidence of glacial cold climate on this part of the Earth in the eastern Himalaya. This outcrop also needs to be protected and developed as geopark depicting extreme past climate change of global significance.

South Sikkim Gondwana Deposits are also characterised by the excellent preservation of plant fossils found in the coal beds near Namchi town and Jorethang – Legship road section. There are well-developed cave deposits or speleothems in the south and west Sikkim. These cave deposits are used for the paleoclimate and paleomonsoon determination, together with the cultural archives [Fig. 1, right]. These geoparks may be developed soon as a unique sites in India to educate the local students and people of Sikkim to understand the importance of the geology, and should also attract tourists from all over the world.



*Figure 1: Fossil stromatolites (left), and cultural archives (right) from Sikkim Himalaya.*

*References:*

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