Field Transect: *ER005, The Teesta Chronicle: tectonics-climate & human-landscape dynamics.*

Geological Significance:

- *The foreland alluvial plains flanking the Himalayan orogenic belt in the south and the transverse drainage systems, flowing out of the mountain belt, in a southerly direction play significant role in understanding the tectono-geomorphology of the area and the prevalent palaeo-climatic setting.*
- *Located at the foothills of the eastern Himalayas, the Teesta mega fan and its environs provide an ideal setting to decode the tectonics-climate and human-landscape dynamics of the area. Bounded at its western margin by Mahananda River and in the east by Jaldhaka River. The Teesta River is known for its reported history of frequent lateral migration across the surface of the megafan. The course of this river is characterized by aggradational, degradational terraces (in the mountain front and the plains) and strath terraces in the hinterland.*
- *The expressions of the various tectonic units of the Himalayas are present in the Quaternary sediments of Teesta basin and the Pre Quaternary rocks. The faults in the area follow both the regional west to east tectonic grain as well as transverse orientations to the regional grain. Many of the transverse drainages emerging from the mountain front follow tectonically controlled courses. The process of deposition of Teesta fan has been tectonically driven and the activities of various fault segments are preserved within the fan sequence. The sedimentation in the basin has been episodic and evidences present within the sediments point towards activity of the faults during and after sedimentation.*

International Attraction:

- ✓ *The proposed area for excursion is one of the most active tectonic domain in Eastern Himalaya that preserve manifestations of regional faults (MBT, MFT) in rocks ranging in age from Proterozoic to Recent. Signatures of past and recent tectonic activities widely present in the area are helpful in understanding the tectonic history, geomorphology and evolution of the Eastern Himalayas.*
- ✓ *Field evidences of both fan building process and fluvio-glacial sedimentary structures are prevalent in the area. The integrated interplay of anthropogenic activities as a response to flood control measures, hydropower generation and irrigational practices on the river morphology can also be observed in the field.*

Duration-5 Days
Date of Excursion: Post-Congress
Max.Participants:20

GEOTOURIST SITES:

World famous tea garden in Darjeeling

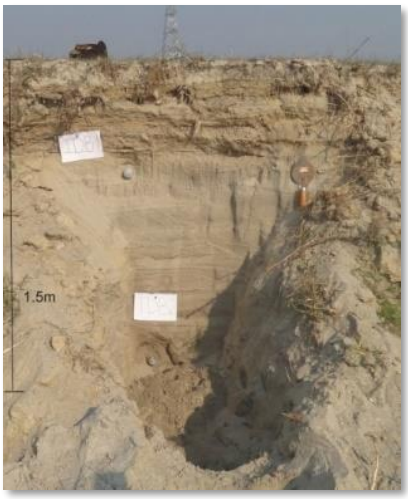
Darjeeling Himalayan Railway (DHR)

Spectacular fault scarps of Teesta basin

Geological Field Photographs:

Unpaired terraces

Proximal fan facies



Distal fan facies

Multi hazard resistant structures

Stress marks in engineered structures near faults

GEOTOURIST SITES:

Darjeeling Himalayan Railway (DHR), *a UNESCO World Heritage site, is a narrow gauge railway line, that links the Darjeeling hills with the plains, built in 1879. The DHR often called the "toy train" for its dimiautive size traverses through an endless series of switchbacks, loops, hairpin turns, tunnels and bridges, standing the test of times as outstanding feats of engineering A ride in DHR, through the picturesque Himalayan foothills is integrated in the excursion.*

Darjeeling Tea Estates

The Darjeeling hills and its surroundings produce some of the best tea in the world. A visit to one of the famous tea estates will be conducted during the excursion wherein the delegates will be taken to a tour to experience the tea cycle, process of tea production.