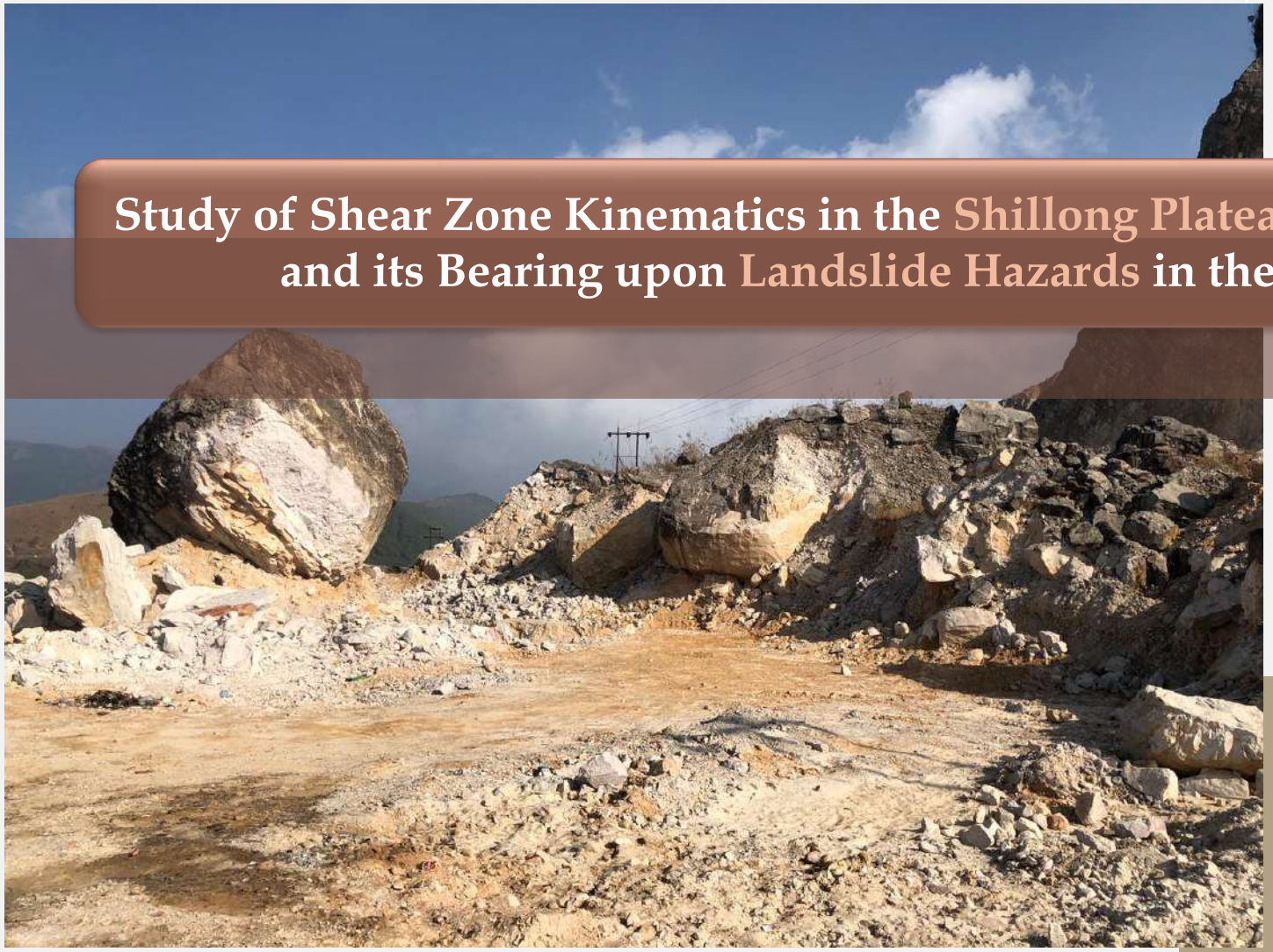


DST Project

Study of Shear Zone Kinematics in the Shillong Plateau: Tectono-Seismic Implications and its Bearing upon Landslide Hazards in the Northeast Region, India

Dr. Sunayana Sarkar

(Principal Investigator)

DST Project

Landslide Research Scheme under and National Geospatial Programme (**NGP**) Erstwhile Natural Resources and Data Management System (**NRDMS**)

TPN No.
NRDMS/LS/34301/2020

Overview

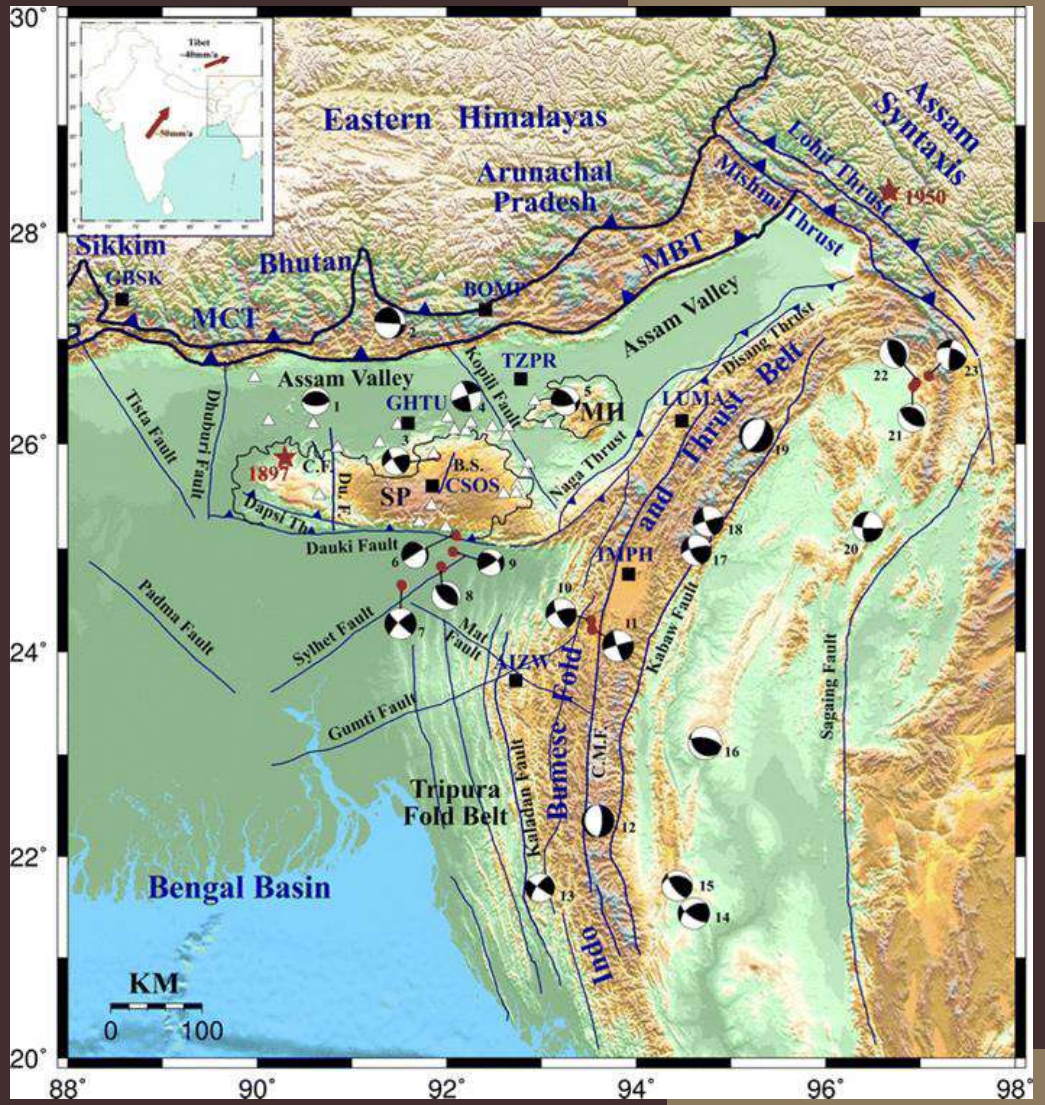
Timeline: October 2020 to September 2023

The Shillong Plateau in the northeastern part of the Indian shield has a very interesting and unique tectonic history. Though in close proximity to the Himalayan range, it has a tectonic exhumation genesis, exclusive from the main Tethyan orogeny. Several major E-W and N-S trending shear zones and faults mark the boundaries of the almost cuboid highland mass. These lineaments are considered to be responsible for most of the seismicity in the Brahmaputra valley region, right up to the Burmese range. The Indian seismic code BIS-1893-2002 places the entire northeastern region in the highest intensity of Zone V.

- The Project involves comprehensive study of the shear zones in the plateau in conjugation with possible pseudotachylites of the area, taken as Tectono-seismic parameters and its bearing on landslide probability in the region.

- Detailed mapping of the shear zones, sample collection and analysis, GIS integration of data using ArcGIS

Shillong Plateau



Gantt Chart

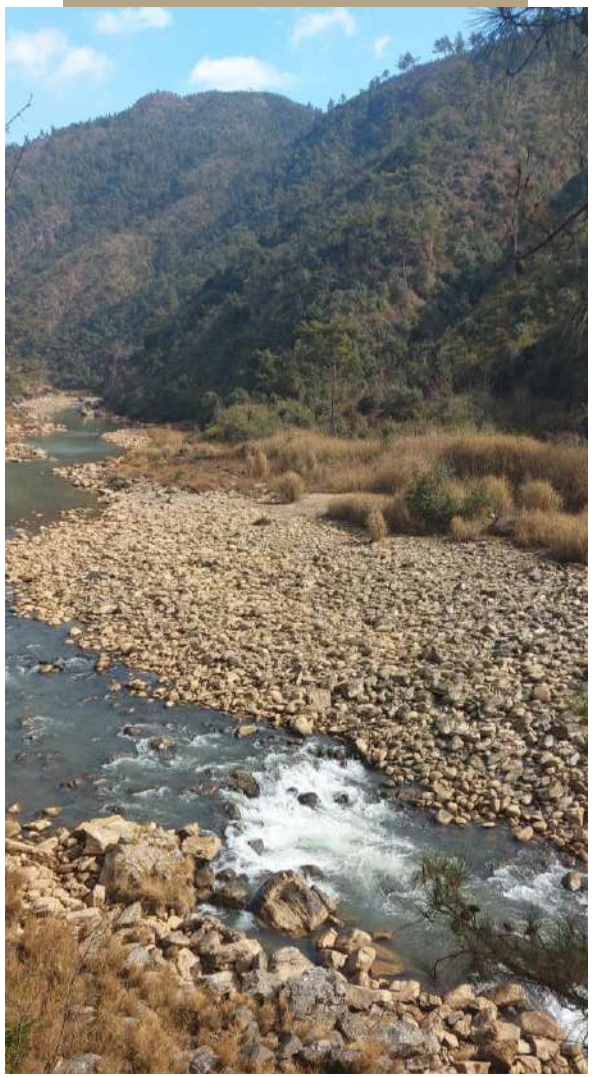
Gantt Chart showing time frames for each task

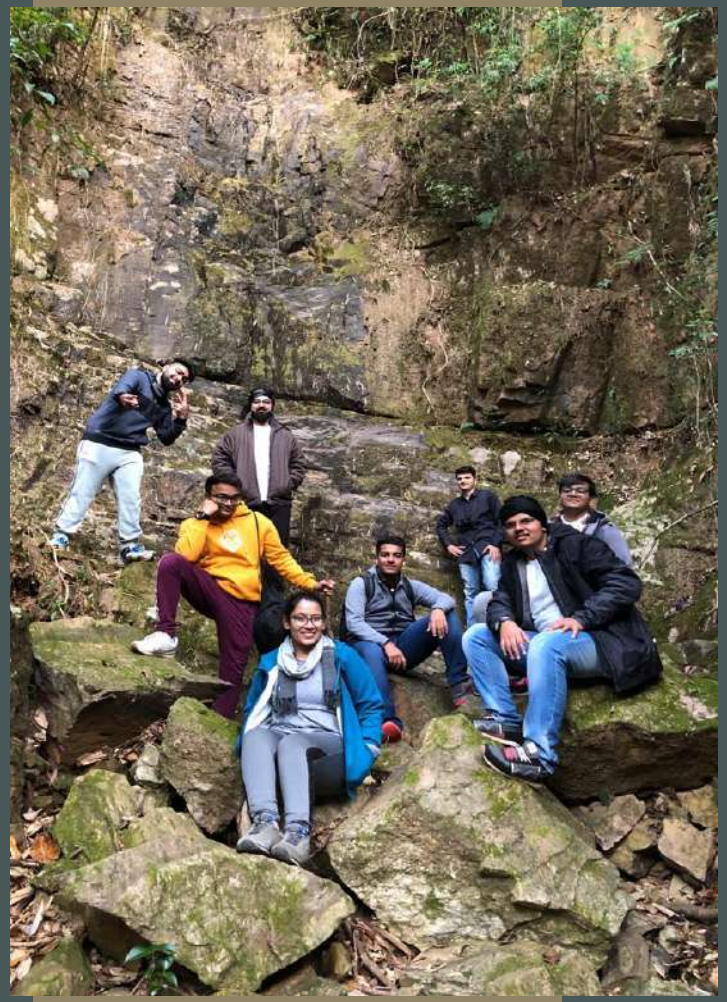
S.No.		Task	Months in Year 1												Months in Year 2												Months in Year 3											
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1		**Literature review**																																				
	i	Review of past work																																				
	ii	Identification of key knowledge gaps																																				
2		**Field work**																																				
	i	Field investigation/survey/mapping																																				
	ii	Collection of structural geological field data																																				
	iii	Collection of rock samples																																				
3		**Integration of data using ArcGIS**																																				
	i	Laboratory preparation of rock samples																																				
	ii	Analysis and interpretation of Rock samples																																				
4		**Post processing**																																				
	i	Structural geological map																																				
	ii	Rock Mass Characterization and slope stability analysis																																				
	iii	**Integration of data using ArcGIS**																																				
5	i	**Detailed report preparation**																																				

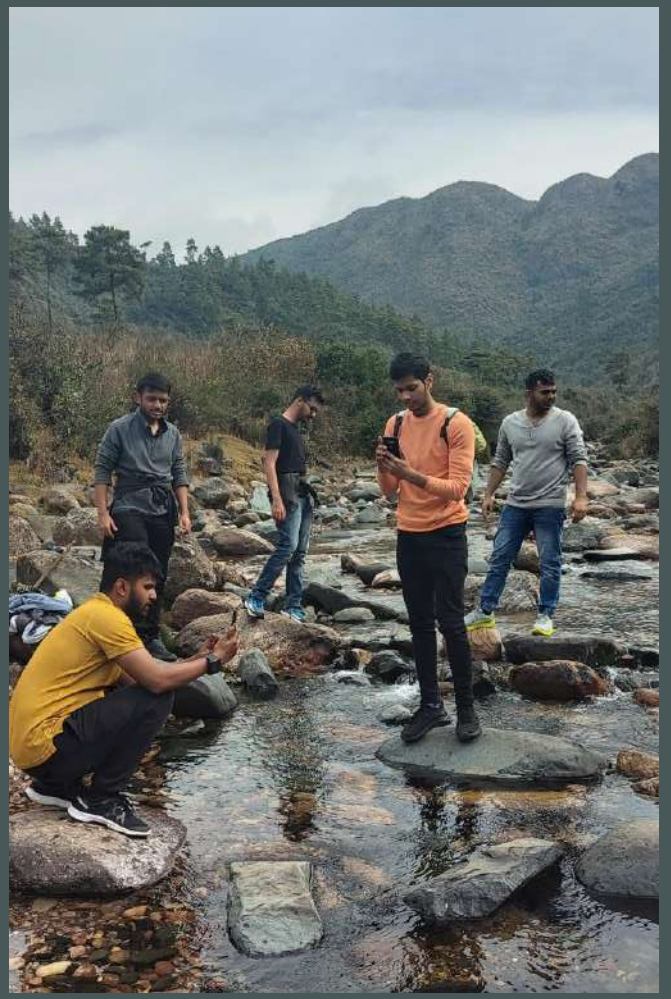
Legend

- Concentrated Work
- Continuing Work
- Completion of Work

Note: Work schedules shown for months where Month 1 is assumed to be January







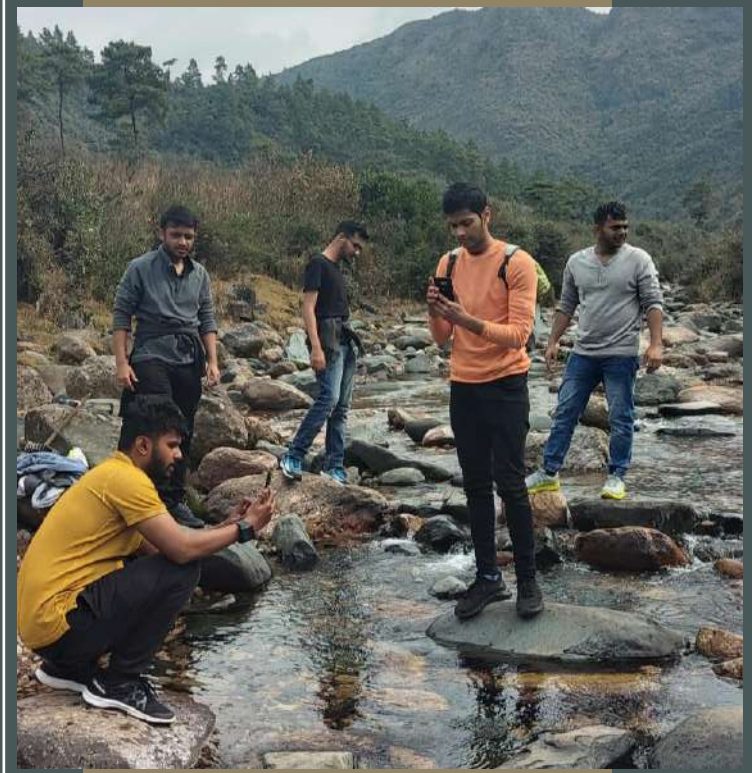
Student Involvement

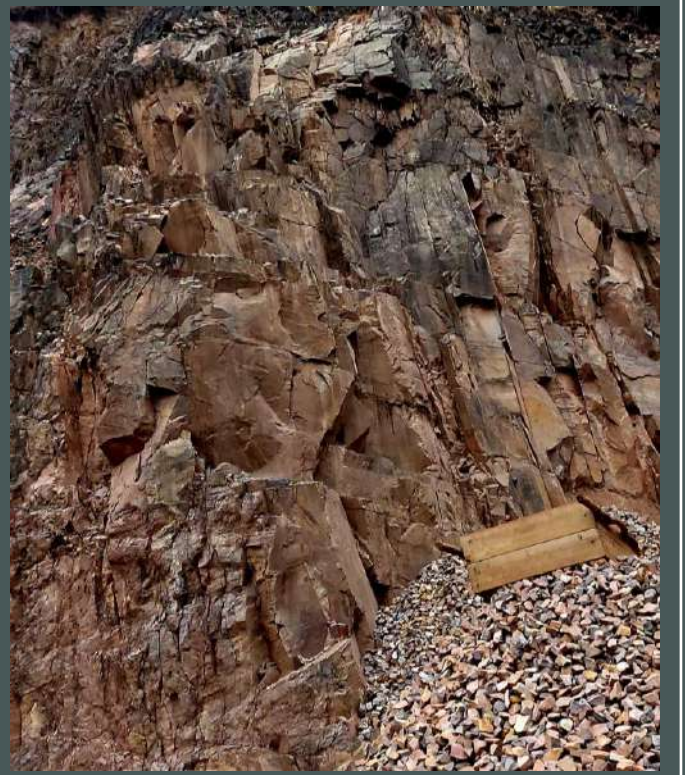
- Students from the department exposed to detailed field work for the project.
- Summer internships under the project, specifically on ArcGIS platform

Student Involvement

Field Photographs

Field Photographs





Engineering Geology forms a base easel for using the vibrant palette of Civil Engineering Verticals