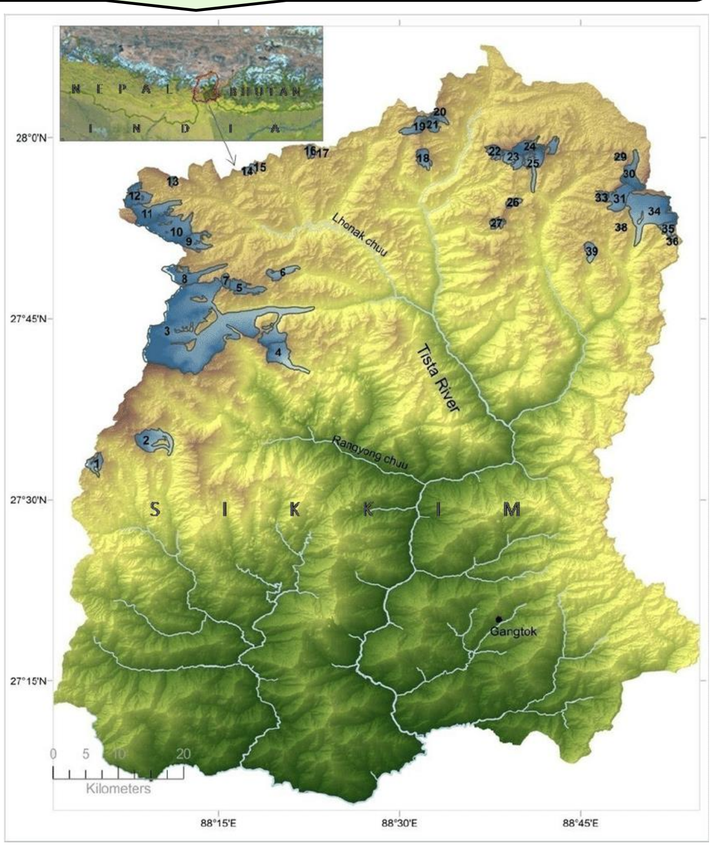
CRYOSPHERE REMOTE SENSING

IMPORTANT GLACIERS IN SIKKIM

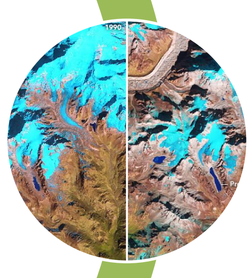
Major area of Cryospheric Studies



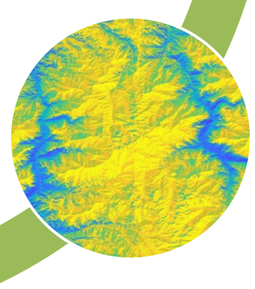
Sikkim is a tiny state of India (7096 km2) in the Eastern Himalaya, which constitutes 0.22% of the total geographical area of India. The latitudinal extent of Sikkim is 27º07'04" N to 28º07'26" N and longitudinal extent is 88º0'51"E to 88º55'25"

MAJOR RESEARCH PROBLEMS STUDIED

Glacial Lake Outburst Floods Risk Analysis

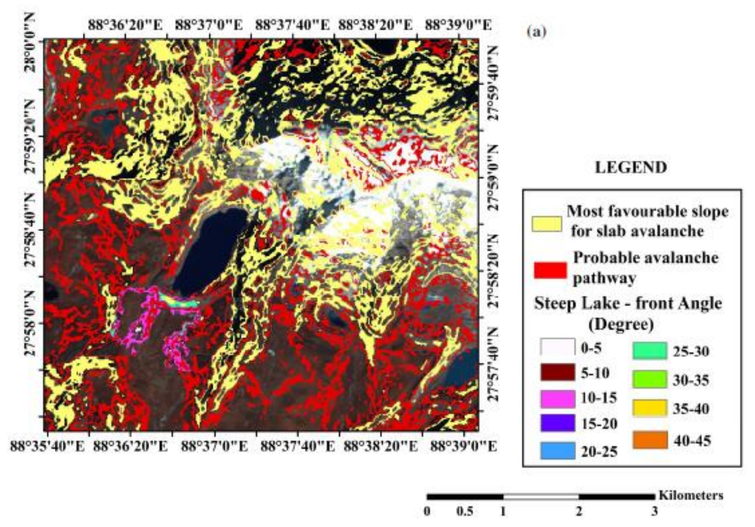


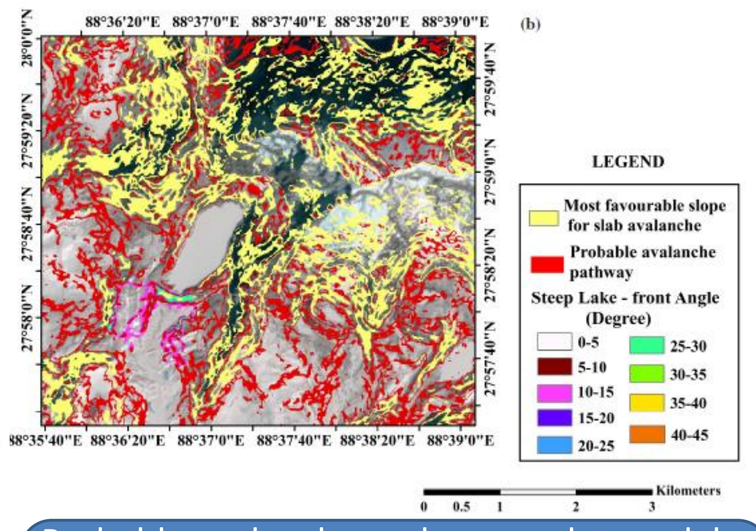
Spatio-temporal change assessment in glaciers



Snow indices and their inter-relationship

Glacial Lake Outburst Flood (GLOF) Risk Analysis using HEC-RAS and Geospatial Techniques



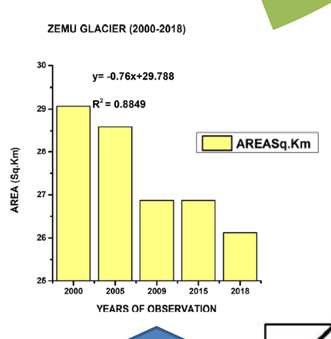


Probable avalanche pathway and steep lake angle (SLA) around Shako Cho lake (a) during ablation (b) during the accumulation period

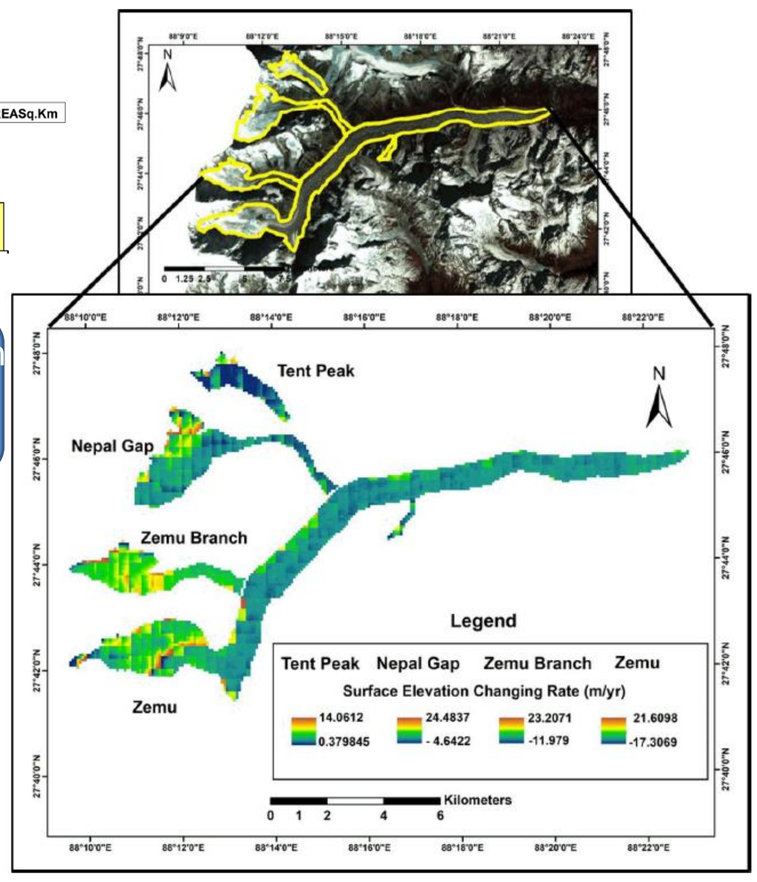
Spatio-temporal and surface elevation change assessment of glaciers across different size classes

Size of glaciers (km^2)	Classes
0.01–1.00	Class–I
1.01–2.00	Class–II
2.01–3.00	Class–III
3.01–4.00	Class–IV
4.01–5.00	Class–V
5.01–6.00	Class–VI
> 6.00	Class–VII

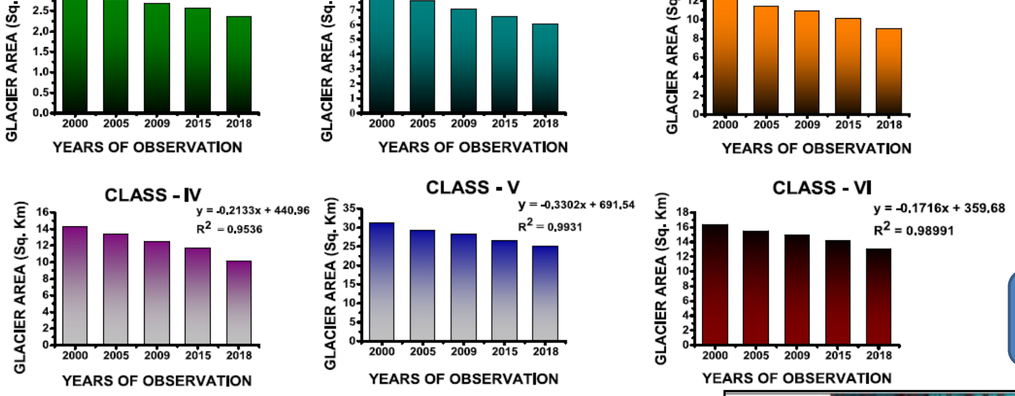
Glacial Size classes



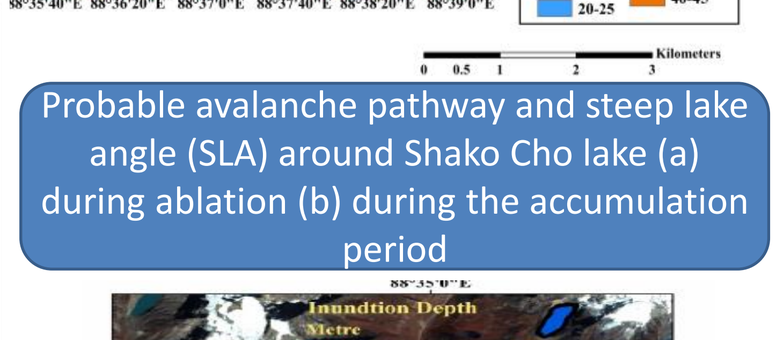
Changes observed in Zemu glacier (2000–2018)

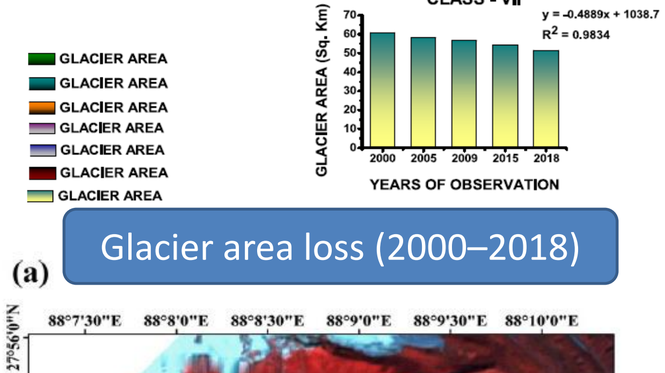


Surface Elevation Changing rate in ZEMU Glacier (Sikkim)

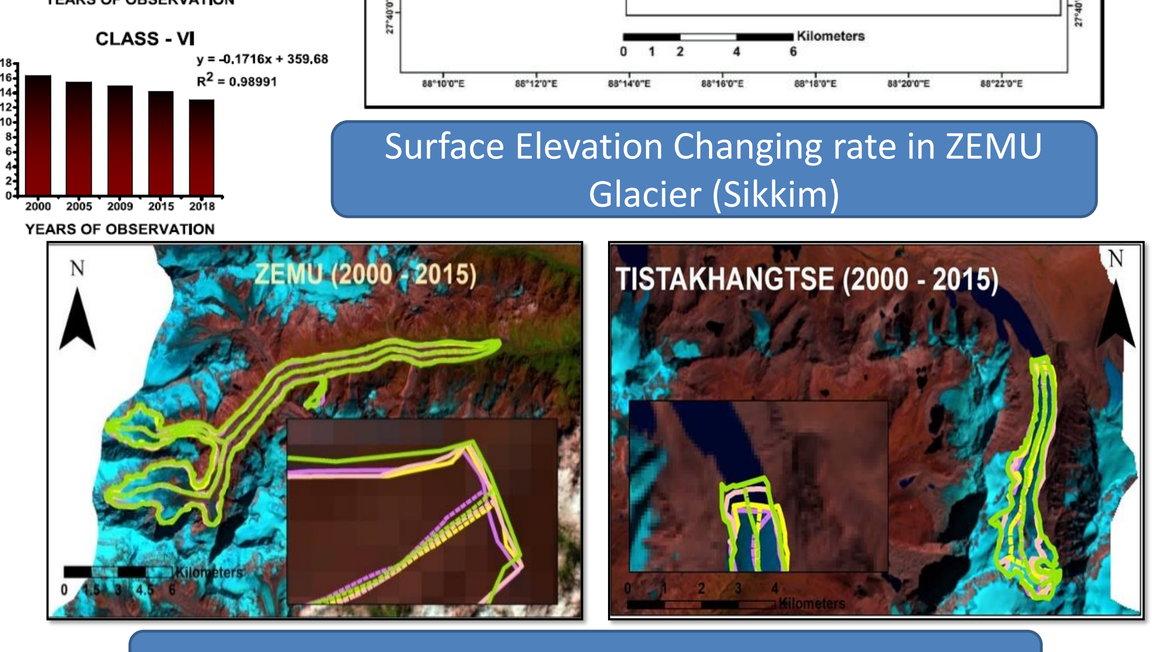


Glacier area loss (2000–2018)





Gradual shape change in **a)** Middle Lhonak Branch glacier and **b)** South Lhonak glacier (branch I) between 2000 and 2018



Spatio-temporal change in glacier area (2000 - 2015)

Aspect-wise distribution of glaciers in Sikkim

Glacier area change in different slope directions

Stages of inundation depth and velocity of water from Lake outburst flood near Thangu village, Yathang village and Helipad ground, Sikkim

Department of Remote Sensing