

Preliminary Hazard Assessment of High Risk Glacial Lakes of Category 'A' in Sikkim



SOUTH LHONAK LAKE (No. 6 High Risk Lake)



Preliminary assessment carried out by scientific team of Science & Technology Department, Government of Sikkim

- Elevation 5210 m, Area 150 Ha, Volume 84 million m³
- Very High lake volume
- Glacier tongue and lake is in direct contact and therefore generates massive calving of Ice
- Unstable lateral moraine prone to slope failures
- Risk of avalanche and landslides
- Discharge of North Lhonak Lake and North Lhonak Glacier is draining into the lake
- Natural outlet exists which is widened and deepened

LACHEN KHANGSE LAKE (No. 7 High Risk Lake)



Preliminary assessment carried out by scientific team of Science & Technology Department, Government of Sikkim

- Elevation 5212 m, Area 69 Ha, Volume 34 million m³
- High volume of lake
- Steep downhill gradient from head wall posing threat of Hanging glacier (HG)
- Low freeboard
- No natural outlet exists, vulnerable moraine dam

LACHUNG KHANGSE LAKE & LA CHHO (No. 8 & 9 High Risk Lake)



Preliminary assessment carried out by scientific team of Science & Technology Department, Government of Sikkim

- Lachung Khangse Chho-Elevation 5090 m, Area 26 Ha Volume 11 million m³,
- La Chho - Elevation 5039 m, Area 26 Ha, Volume 11 million m³
- La Chho is comparatively safer lake as it is free from potential avalanche site (PAS)
- Lachung Khangse Chho has risk of avalanche and ice fall from hanging glacier(HG)
- Both lakes can generate compounded risk in case of avalanche and ice falls
- No natural outlet exists; vulnerable moraine dam in Lachung Khangse Chho
- Natural outlet exists for La Chho

SHAKO CHHO (No. 10 High Risk Lake)



Preliminary assessment carried out by scientific team of Science & Technology Department, Government of Sikkim

- Elevation: 4990 m, Area: 58 Ha, Volume: 27 million m³
- Steep downhill gradient from head wall of glacier possessing threat of Ice fall and potential avalanche site (PAS)
- High volume
- Limited free board area.
- No natural outlet exists; Vulnerable moraine dam



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