



# GLACIAL LAKE STUDIES IN SIKKIM



## 1. BATHYMETRIC STUDY

### (A) Definition:

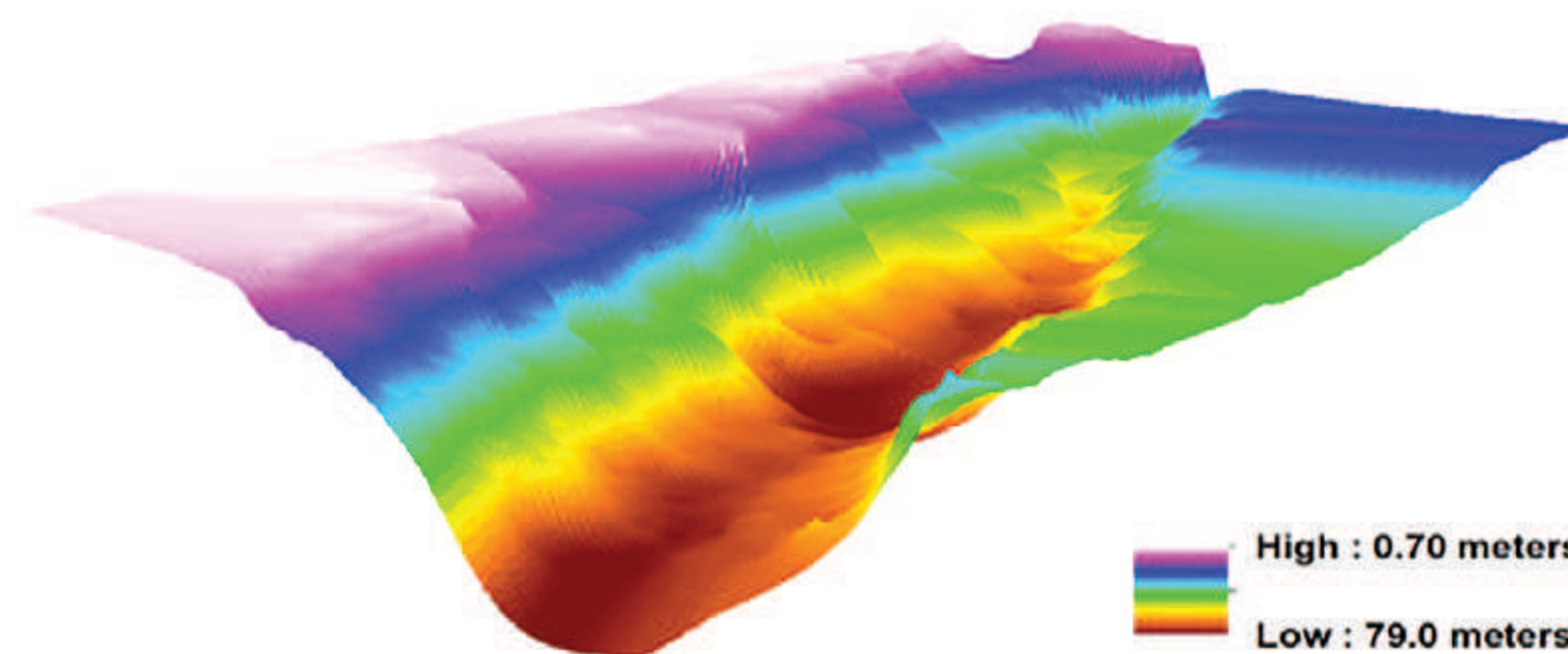
Bathymetric study is the process of measuring how deep water is and maps the shape of the land under lakes, rivers or oceans.

### (B) Instruments used:

Apache 3 unmanned surface vehicle ensemble with differential GPS.



3D profile of Changsang Lake



### (C) Expected deliverables:

- Lake volume and depth estimation
- Lake bed elevations study
- Longitudinal profile of lake
- Hydrodynamic modeling



## 2. COMPREHENSIVE IN-SITU BASED MORPHOMETRIC INVESTIGATION/ HAZARD ASSESSMENT.

### (A) Definition:

It is a detailed study where measurement and analysis of the shape and structure of lake is done. The goal is to understand and evaluate any potential risks or hazards associated with these features.

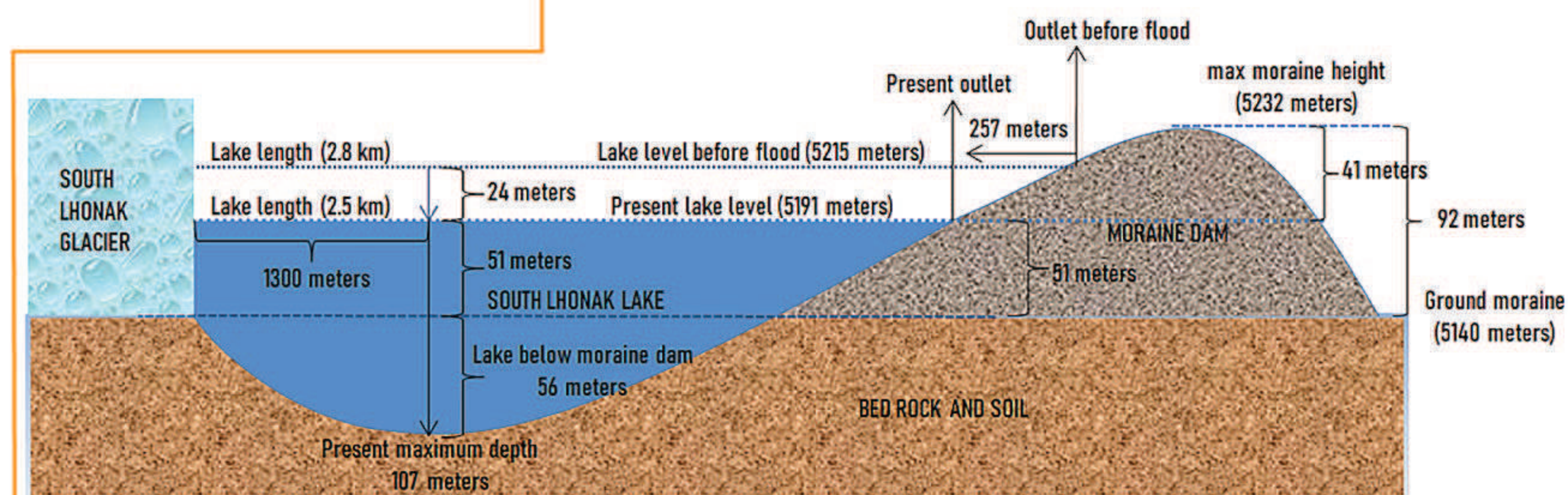
### (B) Instruments used:

Leica distance meter, differential GPS.



### (C) Expected deliverables:

- Potential avalanche zone
- Hanging glacier
- Unstable slope
- Dam width to height ratio
- Hazard assessment of lake



Schematic representation of South Lhonak Lake after the flood of 4 October 2023



Visit Us