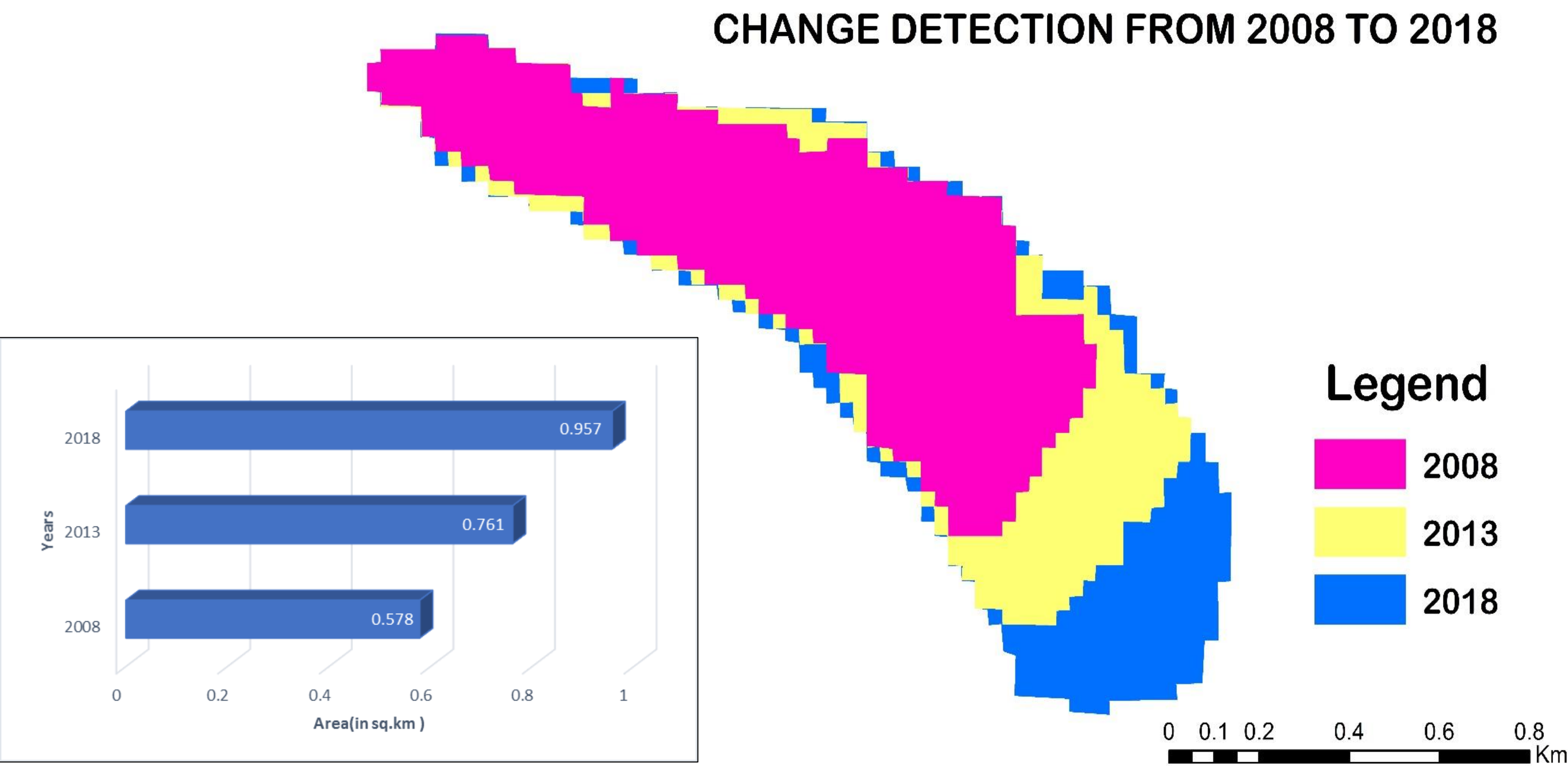
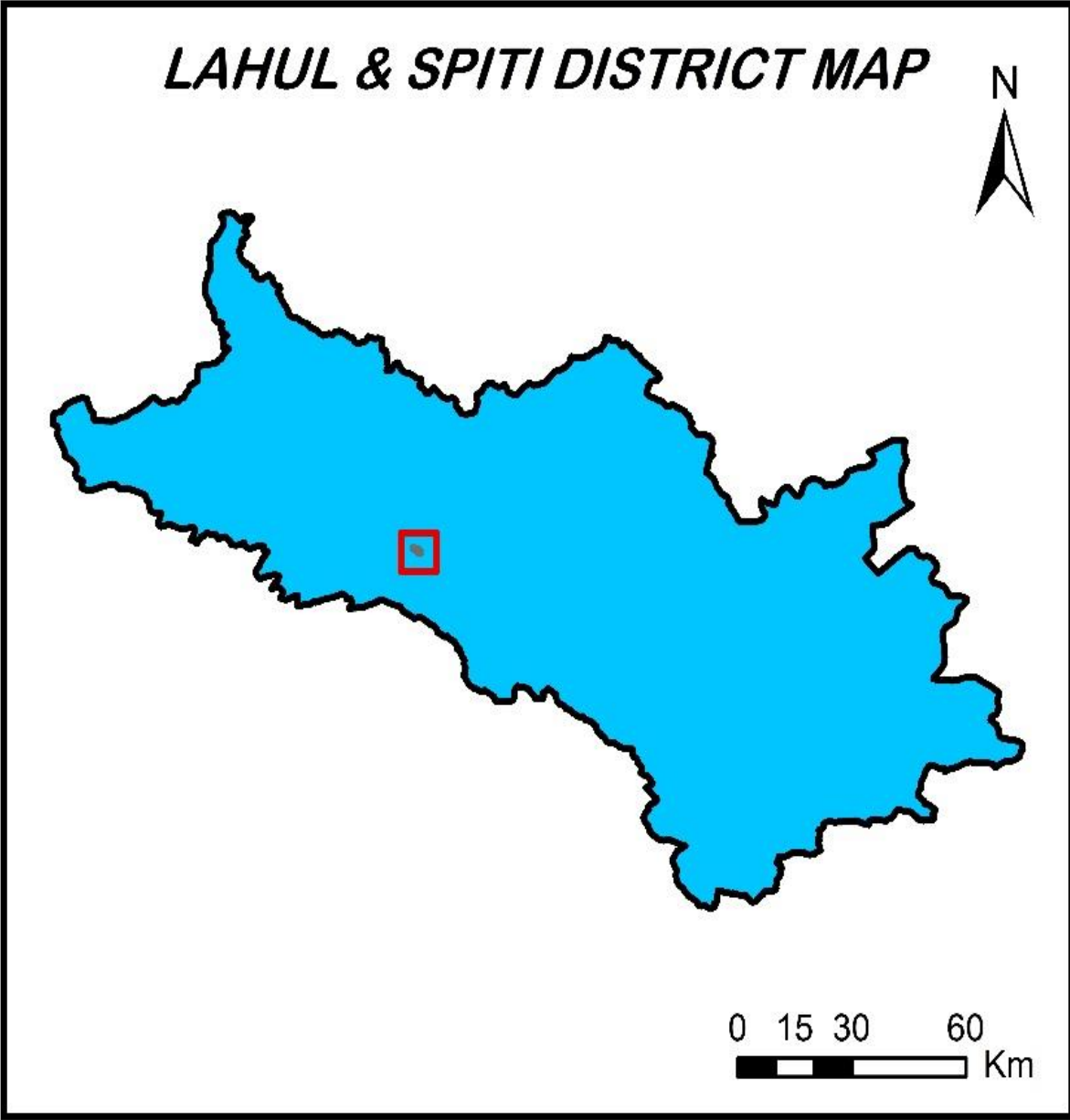
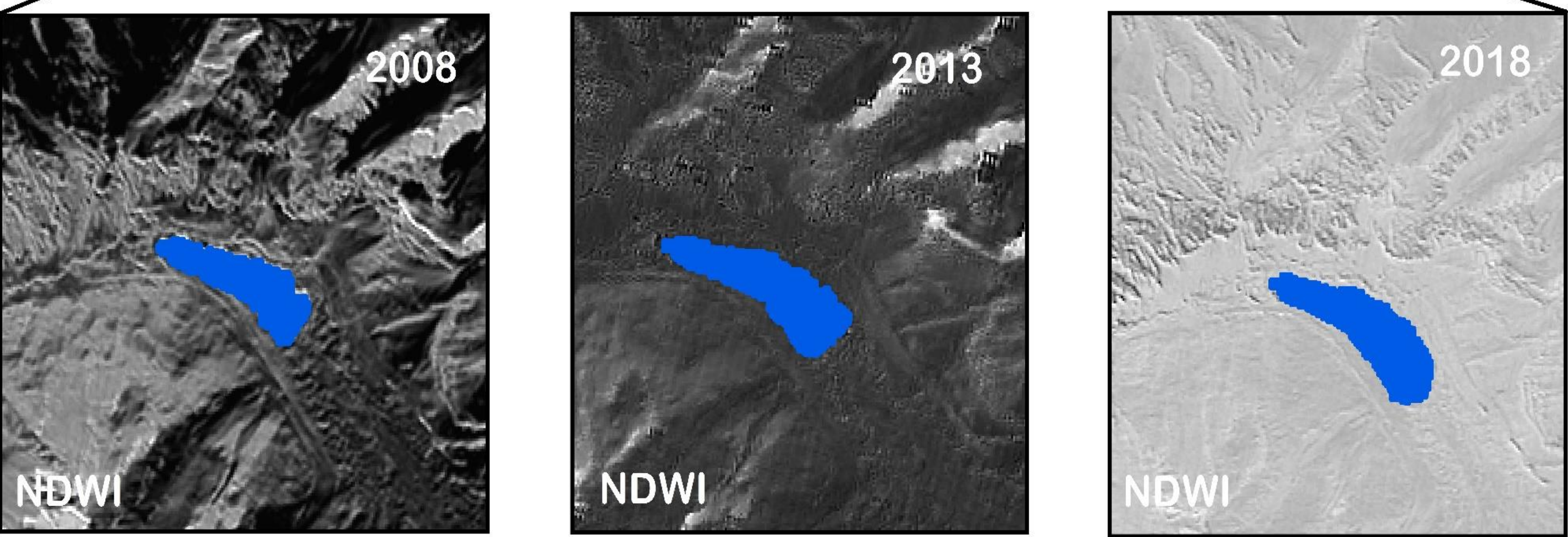
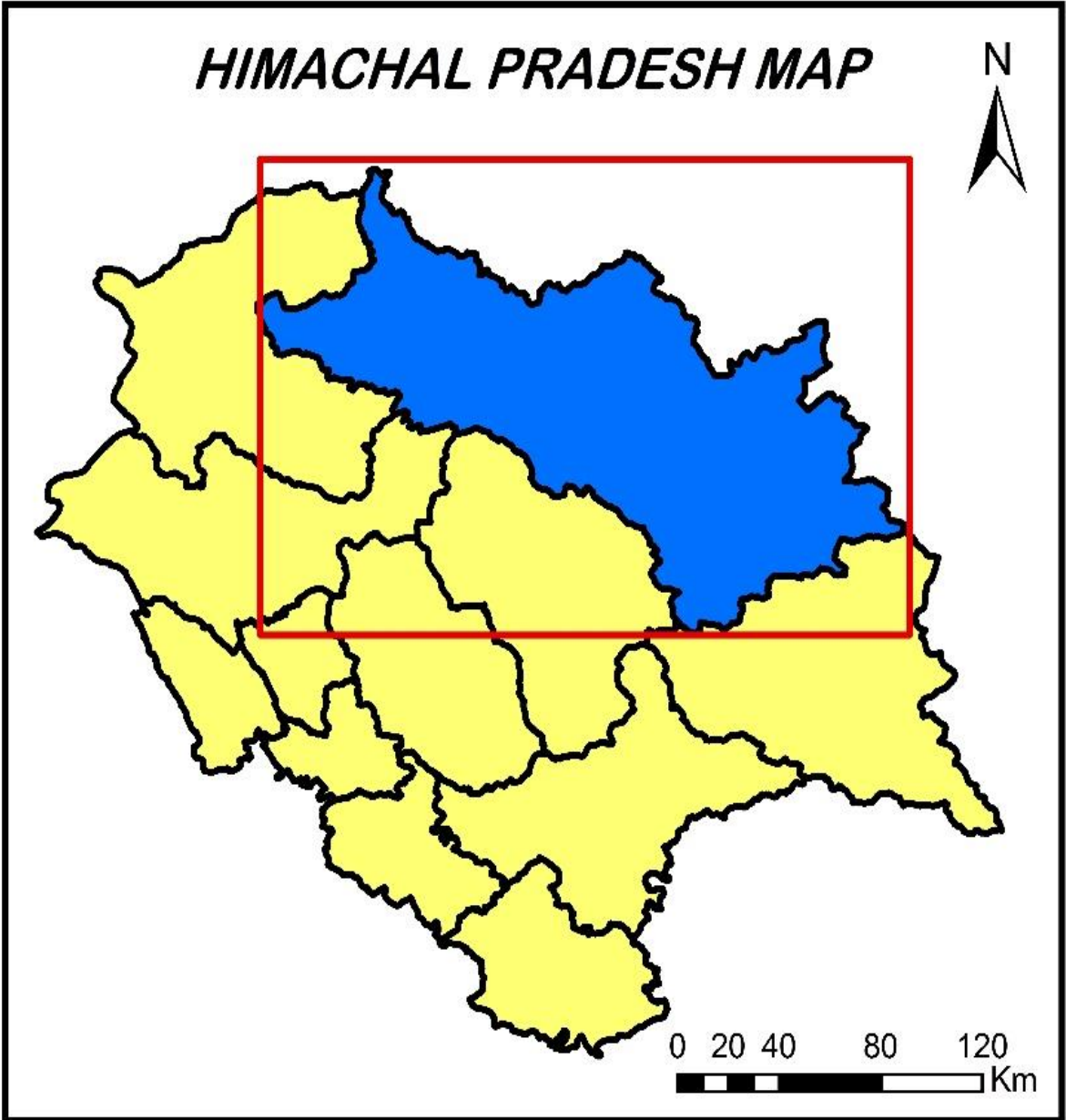
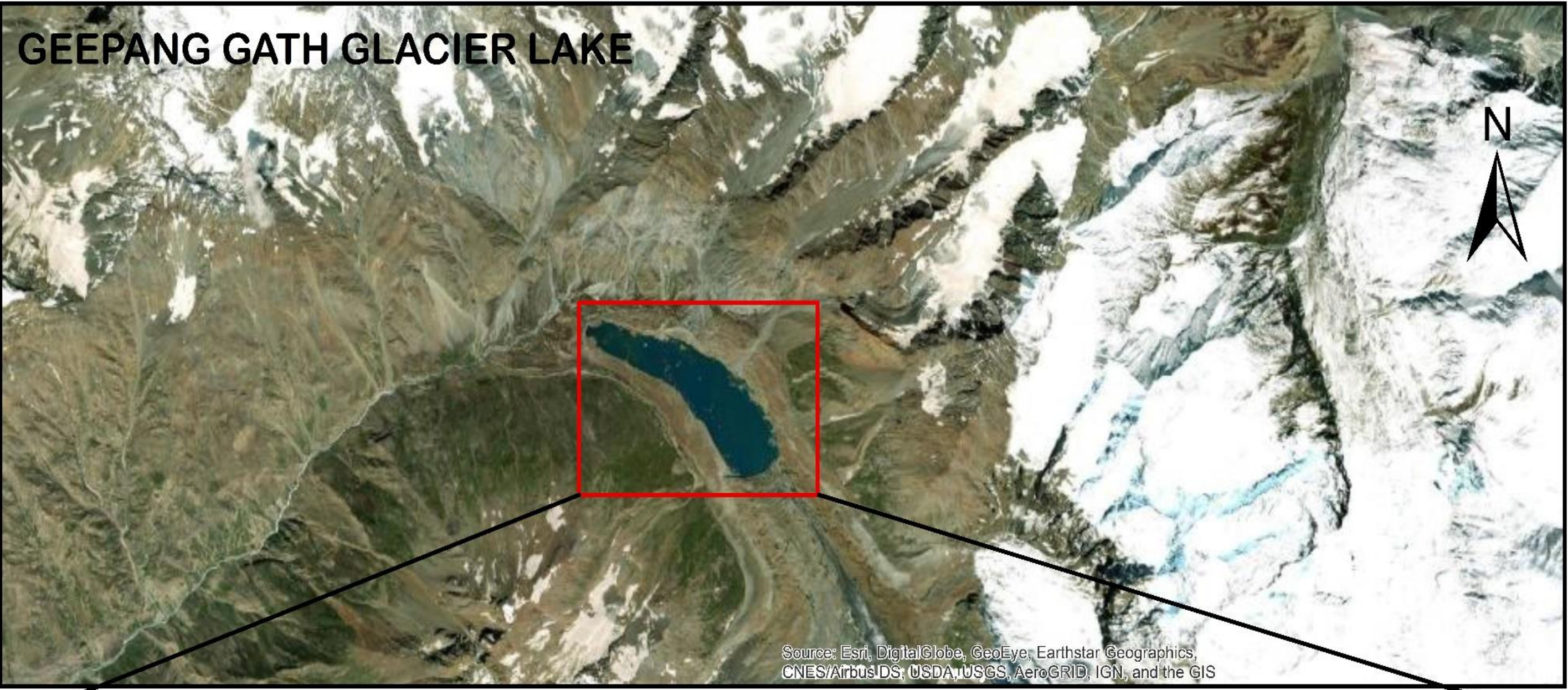


# Change Detection of Glacier lake using LISS-3 Satellite Data

# Map description and analysis



## Introduction:

Sudden release of water from a glacier lake is referred to as Glacier Lake Outburst Flood (GLOF). This is capable of threatening human lives and triggering environmental damage and utilities. The scientific group is primarily focused on monitoring of potential glacier lakes, finding locations where glacier lakes are likely to develop in the future, and measures to avoid floods or reduce damage. GLOFs are among the most common hazards caused by climate change across the Himalayan state of Himachal Pradesh. Geepang Gath glacial lake are main glacial lakes in Lahul & Spiti District.

## Description

- Glacial lake have been mapped using Geographic Information System (GIS) and Remote Sensing (RS) techniques.
- The lake area has increased from 0.578 to 0.957  $km^2$  for Geepang Gath glacier lake during 2008 – 2018.
- The present result suggests that from the year 2008 to 2018, the lake area is continuously increasing.
- The use of GIS and Remote sensing technology has allowed lakes developed at higher altitudes to be mapped, which would not have been possible through field investigations.
- Information provided by systematic study of satellite images give an idea about the formation of these lakes.
- In order to understand the change in their location, the monitoring of glacial lakes, Geepang gath was carried out in depth.
- Over the years, the monitoring showed a gradual increase in their size, which is further justified by primary survey results.
- It is therefore important to research such lakes in detail using satellite data in order to evaluate the hazards of such lakes.
- As new glacial lakes are being created and existing ones continue to grow, the issues of risk assessment, early warning systems, and mitigation measures to reduce impact are becoming ever more important.
- It is vital to identify potentially dangerous glacial lakes and the risks they pose, and highlight the critical ones.
- Planners, policy makers, development workers, and scientists need to develop and implement appropriate mitigation measures including the implementation of early warning systems.



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