GLACIAL LAKE ATLAS

OF

GANGA RIVER BASIN

Prepared under: National Hydrology Project
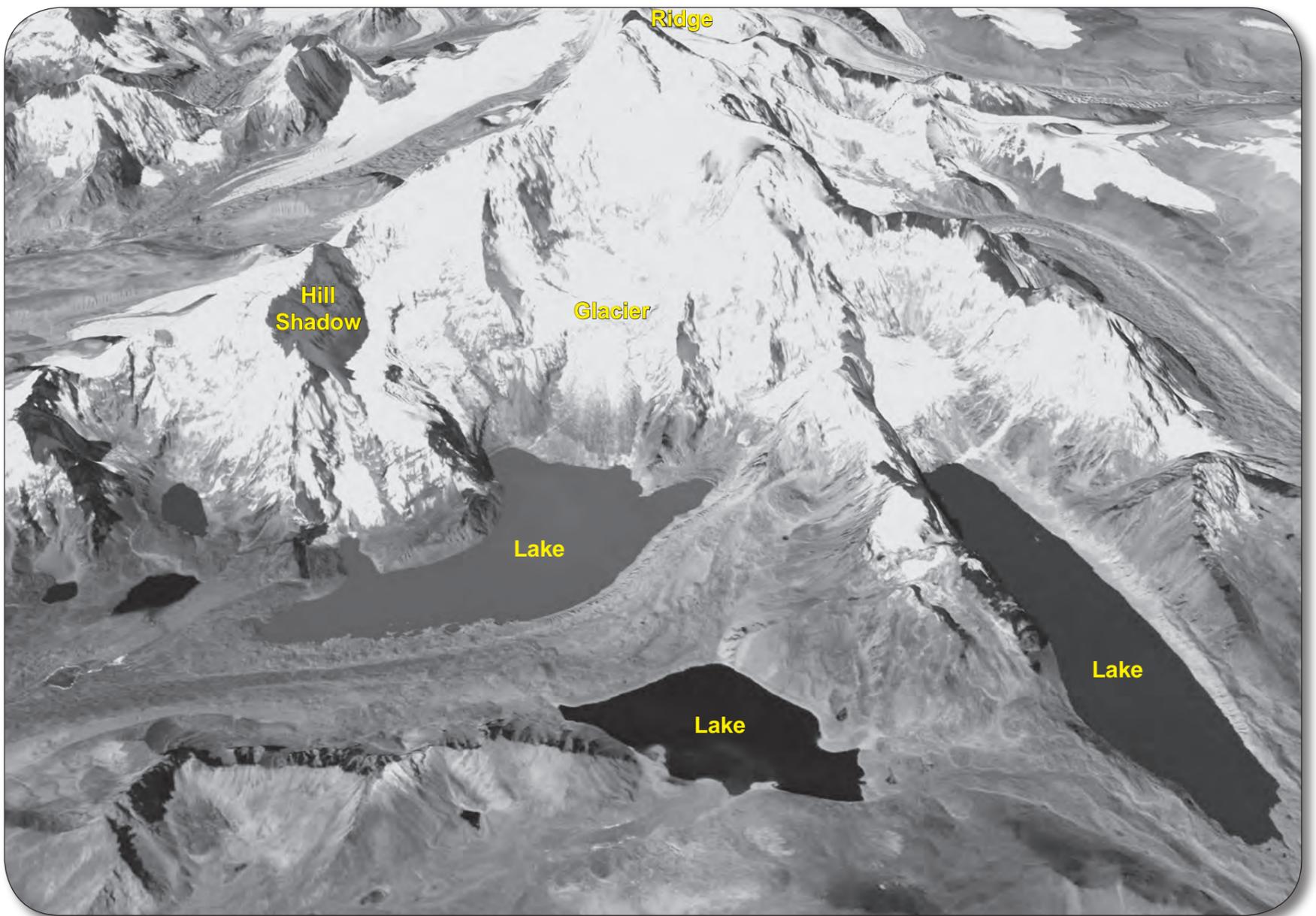

National Remote Sensing Centre
Indian Space Research Organisation
Department of Space, Government of India
Hyderabad - 500 037

May 2021

GLACIAL LAKE ATLAS
OF
GANGA RIVER BASIN

Prepared under: National Hydrology Project

National Remote Sensing Centre
Indian Space Research Organisation
Department of Space, Government of India
Hyderabad - 500 037

May 2021

DOCUMENT CONTROL SHEET

1	Security Classification	Official			
2	Distribution	General			
3	Report/Document version	(a) Issue no. 1	(b) Revision & Date		
4	Report/Document Type	Technical Report			
5	Document Control Number	NRSC-RSA-WRG-WRAD-MAR2021-TR-0001818-V1.0			
6	Title	Glacial Lake Atlas of Ganga River Basin			
7	Particulars of collation	Pages: 194	Figures: 93	Tables: 75	Maps: 46
8	Author(s)	B. Simhadri Rao, Ankit Gupta, Sweta, Ruhi Maheshwari, P. V. Raju, and V. V. Rao			
9	Affiliation of authors	Water Resources Assessment Division (WRAD), Water Resources Group, RSAA, NRSC, ISRO, Hyderabad			
10	Project Team	Dr. V. V. Rao	Project Director (NHP) Scientist/Engineer 'H', Group Director (WRG)		
		Mr. P. V. Raju	Deputy Project Director Scientist/Engineer 'G', Head, WRAD		
		Mr. B. Simhadri Rao	Principal Investigator Scientist/Engineer 'SG', WRAD		
		Technical Team	Mr. Ankit Gupta, Research Scientist, WRAD Mrs. Sweta, Senior Research Fellow, WRAD Mrs. Ruhi Maheshwari, Senior Research Fellow, WRAD Dr. Nibedita Guru, Research Scientist, WRAD (formerly with NRSC)		
11	Scrutiny mechanism	Approved / Controlled by	Dr. P. V. N. Rao, Deputy Director (RSAA)		
12	Originating unit	Water Resources Group (WRG) Remote Sensing Applications Area (RSAA) National Remote Sensing Centre, Hyderabad-500 037			
13	Sponsor/Name & Address	National Hydrology Project Ministry of Jal Shakti, New Delhi, Govt. of India			
14	Date of Initiation	January 2021			
15	Date of Publication	May 2021			

Abstract:

This atlas provides the details of glacial lakes present in the Ganga River basin including their hydrological, geometrical, geographical, and topographical attributes. The satellite data used and methodology followed in delineating the lakes are also discussed. The information on glacial lake types, their areal extent and elevation variations at basin, subbasin level, and administrative units like India, State, and District are provided. Glacial lake maps and respective satellite images are also presented in corresponding SOI Toposheets (1:250,000 scale) covering Ganga River basin. A total of 4,707 glacial lakes (greater than equal to 0.25 ha) are mapped using Resourcesat-2 LISS-IV satellite images for the entire Ganga River basin, with a total lake water spread area of 20,685.12 ha. Nine out of ten different types of glacial lakes are identified and categorised into four major classes, viz., Moraine-dammed lake, Ice-dammed lake, Glacier Erosion lake, and Other Glacial lake. Out of 9 types of glacial lakes, Other Glacial Erosion lakes are found to be the maximum with 1,744 in number occupying a total lake extent of 4,612.02 ha in the basin.

Keywords: Glacial Lakes, Remote Sensing, Ganga River basin, Lake Type, Inventory

पंकज कुमार
PANKAJ KUMAR
सचिव
SECRETARY
Tel.   : 23710305, 23715919
Fax   : 23731553
E-mail : secy-mowr@nic.in

MESSAGE

National Hydrology Project (NHP) was taken up by Department of Water Resources, River Development & Ganga Rejuvenation (DoWR, RD&GR), Ministry of Jal Shakti with the aim of improving the extent, quality and accessibility of water resources information and to strengthen the capacity of targeted water resources management institutions in India. National Remote Sensing Centre (NRSC), one of the premier centres of Indian Space Research Organisation (ISRO) is taking part in this initiative of DoWR, RD&GR as one of the Implementing Agencies under NHP.

Water resources availability and the ability to derive its information using modern tools like remote sensing and GIS with high temporal and spatial coverage, will usher in a new era of efficient and equitable water management. In the era of satellites, with the availability of voluminous data, big data analytics, artificial intelligence and other information extraction methods provide access to rapid and reliable information on water resources even from inaccessible areas.

The might Himalayas on the northern boundary of the country stand high with large number of glaciers and glacial lakes. It is important to map the glacial lakes in detail due to the increasing incidents of flash floods in the Himalayas. The prime objective of detailed mapping of glacial lakes is to reduce the damage to the downstream areas from the devastation that is caused by Glacial Lake Outburst Floods (GLOF). Glacial Lake Atlas of Ganga River Basin containing a wealth of information about 4,707 glacial lakes is prepared to assess GLOF risk for the Ganga River Basin. The Atlas, written in a well-structured manner, would be of benefit to experienced professionals and subject experts.

Since the Atlas will be accessible through the India-WRIS and BHUVAN portals, this would be a step forward in making available all the water related data and products from different Central and State Organisations available on one platform, ensuring ease of access to the end user.

I compliment the initiative of NRSC team for successful completion of this important task under NHP, and look forward to the logical continuation of this effort in the form of GLOF risk assessment study and its outcome in the form of Disaster Risk Reduction (DRR) from GLOF in the Indian Himalayan Region.

(PANKAJ KUMAR)

डॉ. कै. शिवन
Dr. K. Sivan

अध्यक्ष, अन्तरिक्ष आयोग
व
सचिव, अन्तरिक्ष विभाग
Chairman, Space Commission
&
Secretary, Department of Space

MESSAGE

Snow and glaciers play a crucial role in the interaction between atmospheric and land surface processes in high mountains areas like the Himalaya. Retreat and thinning of glaciers could lead to formation of glacial lakes with the accumulation of water near their snout. Breach of such lakes may result in Glacial Lake Outburst Floods (GLOF), a potential hazard for the people and infrastructure in the downstream reaches. Hence, identification and monitoring of glacial lakes is very critical for reducing the associated risk. Multispectral, multi-temporal data from the Indian Remote Sensing satellites enable systematic inventory and monitoring of glacial lakes in the Himalayan Region.

National Remote Sensing Centre (NRSC)/ISRO is one of the Implementing Agency under National Hydrology Project, funded by DoWR, RD&GR, Ministry of Jal Shakti, Govt. of India. Among the many work components which are being carried out by NRSC as part of NHP, the atlas of Glacial Lakes of Ganga River Basin is also generated. This atlas provides various information such as the type, hydrological & topographical characteristics etc., of glacial lakes of equal to more than 0.25 ha size in the Ganga River Basin. It will serve as a scientific source of information for technical & administrative management, supporting disaster risk reduction and climate change induced impact assessment.

I appreciate the efforts of technical team of NRSC/ISRO, Hyderabad, for bringing out this atlas of Glacial Lakes in the Ganga River Basin. I am sure that the atlas will be of great use for researchers, professionals and administrative personnel, in strengthening the disaster risk reduction activities and climate change studies.

(कै. शिवन / **K. Sivan**)

भारत सरकार
अन्तरिक्ष विभाग
राष्ट्रीय सुदूर संवेदन केन्द्र
बालानगर, हैदराबाद-500 037, तेलंगाना, भारत
टेलिफोन : +91 40 23878360
+91 40 23884000-04
फेक्स : +91 40 23877210
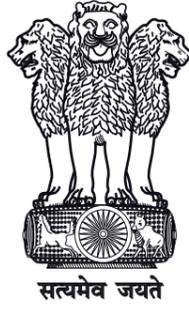
Government of India
Department of Space
National Remote Sensing Centre
Balanagar, Hyderabad-500 037, Telangana, India
Telephone : +91 40 23878360
+91 40 23884000-04
Fax : +91 40 23877210

डॉ. राज कुमार / **Dr. Raj Kumar**
निदेशक / **Director**

FOREWORD

Snow and glaciers provide major source of fresh water for major river systems originating from Himalayas thereby supporting the livelihood of millions of people, particularly in summer months. As the glacier retreats, glacial lakes form around the margins of glacier which store its melt water impounded by the moraines. These glacial lakes occasionally release large quantities of glacier melt water from associated moraine failure, resulting in devastating floods in the downstream reaches. Many such catastrophic floods occurred in the recent past in the Himalayas resulting in loss of lives and damaging critical infrastructure like hydro-power plants, bridges, etc. It is highly imperative to have the knowledge on location of glacial lakes and the consequences of related flood risk. Earth Observation satellite data is highly helpful in identifying and monitoring of glacial lakes, which by traditional ways is practically difficult due to their inhospitable and inaccessible location and highly rugged topography.

The Ganga River Basin atlas is brought out as part of an activity on "Glacial Lake Outburst Flood (GLOF) Risk Assessment of Glacial Lakes in the Himalayan Region of Indian River Basins", taken up under the National Hydrology Project, funded by the Department of Water Resources, River Development and Ganga Rejuvenation (DoWR, RD&GR), Ministry of Jal Shakti, Government of India. Under this activity, glacial lakes of size greater than 0.25 ha are mapped using high resolution satellite data from the Resourcesat-2 LISS-IV MX. Using this geo-database, an atlas titled 'Glacial Lake Atlas of Indus River Basin' has already published and in continuation to that the present atlas titled 'Glacial Lake Atlas of Ganga River Basin' is prepared. This atlas is first of its kind depicting spatial distribution of glacial lakes of size greater than 0.25 ha in the Ganga River basin within India and transboundary hydrologic catchments. The details of glacial lakes are systematically documented at basin, subbasin, administrative, and transboundary region level, including lake type, area, and elevation distribution.

The Ganga River Basin Atlas forms as an authentic and recent reference data, and is useful in monitoring glacial lake dynamics, GLOF risk assessment, and long-term climate change impact analysis.

I appreciate the study team for taking up this initiative to bring out an exclusive "Glacial Lake Atlas of Ganga River Basin". I wish that this exhaustive atlas will be of immense value to Central/State Water Resources, Environmental, and Disaster Management Organisations, and as well as to professionals and academicians.

(Raj Kumar)

भारतीय अन्तरिक्ष अनुसंधान संगठन   **Indian Space Research Organisation**

ACKNOWLEDGEMENTS

PROJECT TEAM

Table of Contents

List of Figures

List of Tables

List of Map Sheets

Abbreviations

amsl	Above Mean Sea Level
ASTER	Advanced Spaceborne Thermal Emission and Reflection Radiometer
AWiFS	Advanced Wide Field Sensor
BCM	Billion Cubic Metre
CWC	Central Water Commission
DEM	Digital Elevation Model
DPR	Detailed Project Report
DoWR, RD&GR	Department of Water Resources, River Development and Ganga Rejuvenation
DSS	Decision Support System
E(c)	Cirque Erosion Lake
E(o)	Other Glacial Erosion Lake
E(v)	Glacier Trough Valley Erosion Lake
ETM+	Enhanced Thematic Mapper Plus
FCC	False Colour Composite
GL	Glacial Lake
GLOF	Glacial Lake Outburst Flood
GOI	Government of India
ha	Hectare
HIS	Hydrological Information System
HKH	Hindu Kush Himalayas
HP	Himachal Pradesh
I(d)	Glacier Ice-dammed Lake
I(s)	Supra-glacial Lake
ICIMOD	International Centre for Integrated Mountain Development
IHR	Indian Himalayan Region
India-WRIS	India - Water Resources Information System
IRS	Indian Remote Sensing Satellite
ISRO	Indian Space Research Organisation
Km^2	Square Kilometre
Landsat	Land Resources Satellite
LISS-III	Linear Imaging Self Scanning Sensor - III
LISS-IV	Linear Imaging Self Scanning Sensor - IV
m	Metre
M(e)	End-moraine Dammed Lake
M(l)	Lateral Moraine Dammed Lake
M(lg)	Lateral Moraine Dammed Lake (with Ice)
M(o)	Other Moraine Dammed Lake
NDGI	Normalized Difference Glacier Index
NDVI	Normalized Difference Vegetation Index
NDWI	Normalized Difference Water Index
NHP	National Hydrology Project
NIR	Near InfraRed
NRSC	National Remote Sensing Centre
NWIC	National Water Informatics Centre
O	Other Glacial Lake
RS	Remote Sensing
RS-2	Resourcesat-2
SK	Sikkim
SOI	Survey of India
TM	Thematic Mapper
UK	Uttarakhand
USGS	United States Geological Survey
WB	Water Body

SUMMARY

National Remote Sensing Centre (NRSC), Indian Space Research Organisation (ISRO), Hyderabad as one of the Implementing Agency under the National Hydrology Project (NHP), is carrying out hydrological studies using satellite data and geo-spatial techniques. As part of this, detailed glacial lake inventory, prioritization for Glacial Lake Outburst Flood (GLOF) risk, and simulation of GLOF for selected lakes are taken up for entire catchment of Indian Himalayan Rivers covering Indus, Ganga, and Brahmaputra River basin. Under this activity, an updated inventory of glacial lakes using high resolution satellite data was prepared for the Indus River basin and published in December 2020 (NRSC-RSAA-WRG-WRAD-Nov2020-TR-0001702-V1.0), and currently an updated inventory of glacial lakes has been prepared for the Ganga River basin, and same for Brahmapurta River basin will be made soon. The present glacial lake atlas is based on the inventoried glacial lakes in part of Ganga River basin from its origin to foothills of Himalayas covering a catchment area of 2,47,110 Km².

The study portion of Ganga River basin covers part of India and transboundary region. Ganga River basin has been divided into 11 subbasins on the basis of confluence of major rivers contributing into the system viz., Yamuna joining the main river on the right, whereas rivers like Sarda, Ghaghara, Gandak, and Kosi joining on the left. Elevation in the river basin varies from the minimum 45 m to the maximum 8,848 m above mean sea level (amsl). In India, Ganga River basin extends in two states viz., Himachal Pradesh and Uttarakhand.

In the present study, glacial lakes with water spread area ≥ 0.25 ha have been mapped using Resourcesat-2 (RS-2) Linear Imaging Self Scanning Sensor-IV (LISS-IV) satellite data using visual interpretation techniques. Based on its process of lake formation, location, and type of damming material, glacial lakes are identified in nine out of ten different types, majorly grouped into four categories viz., Moraine-dammed, Ice-dammed, Glacier Erosion, and Other Glacial lakes.

A total of 4,707 glacial lakes have been mapped in the Ganga River basin using a total of 105 high resolution multispectral RS-2 LISS-IV images, with a total lake water spread area of 20,685.12 ha. Each glacial lake has been given a 12 alpha-numeric unique glacial lake ID, along with several attributes that include hydrological, geometrical, geographical, and topographical characteristics. About 4,035 (85.72%) lakes are with < 5 ha lake area contributing to 23.13% of total lake area. The remaining lakes with ≥ 5 ha in size are 672 (14.28%) contributing to 76.87% of total lake area in the basin. There are only 58 glacial lakes in the Ganga River basin having an area of ≥ 50 ha. Other Glacial Erosion lake type are found to be the maximum with 1,744 (37.05%) occupying a total lake extent of 4,612.02 ha at 22.30% in the basin. More than half (i.e. 59.25%) of the lakes are situated in the very high altitude range of greater than 5,000 m amsl and dominated by Other Moraine Dammed lake type i.e. 48.97%.

Out of 11 subbasins, only 6 subbasins contain glacial lakes, which are predominantly distributed in Kosi subbasin (51.77%) followed by Ghaghara subbasin (26.77%), with a total lake extent of 14,604.34 ha and 3,536.39 ha at 70.60% and 17.10% respectively in the entire basin. In terms of very large size lakes i.e. ≥ 50 ha, Kosi subbasin has majority i.e. 54 out of 58 large lakes within it. Minimum number of glacial lakes are present in Yamuna subbasin (0.76%) and then in Sarda subbasin (1.17%). Other Glacial Erosion lakes, which are dominant lake type in Ganga River basin are uniformly distributed in all subbasins, and found maximum in count in Kosi subbasin. However, Glacier Ice-dammed lake is only one in the entire Ganga River basin and is located in Gandak subbasin. Upper Ganga subbasin consists of higher number of Supra-glacial Lakes in the entire Ganga River basin, whereas Gandak subbasin contains higher number of Lateral Moraine Dammed Lake with Ice.

A total of 369 (i.e. 7.84%) glacial lakes lies within Indian region covering 2.92% of the total lake area, whereas remaining 92.16% of lakes are located in transboundary region with a 97.08% of the total lake area.

In Indian region, majority of glacial lakes are of Other Moraine Dammed type (29.81%), followed by Supra-glacial (28.73%) and Other Glacial Erosion type (21.41%). Uttarakhand state shares 93.50% of lake count, followed by 6.50% in Himachal Pradesh, with a total lake area of 90.70% and 9.30% respectively. Majority of lakes in Uttarakhand and Himachal Pradesh are predominantly of lake area < 5 ha, but lying in high (4,001 - 5,000 m) and very high altitude range (> 5,000 m) respectively. Lakes in Himachal Pradesh are only situated above 4,000 m elevation.

In this atlas, map sheets (plates) are prepared in correspondence with the Survey of India (SOI) toposheet index (1:250,000 scale) which are 42 in number covering the entire Ganga River basin. Out of 42 plates, only 23 plates have glacial lakes and corresponding plates are incorporated in atlas. The map sheets are arranged in such a way that glacial lake map is on the right page and its corresponding satellite image is on the left page. At the end of the atlas, an annexure is provided containing list of all glacial lakes inventoried in the Ganga River basin with their unique glacial lake ID, latitude, longitude, subbasin, glacial lake type, area (ha), and elevation (m). Glacial Lake ID number of 12 alpha-numeric character has 3 characters with dark red colour depicting the corresponding toposheet number of the SOI of 1:250,000 scale.

1. INTRODUCTION

1.1 About Project

The National Hydrology Project (NHP) sponsored by Department of Water Resources, River Development and Ganga Rejuvenation (DoWR, RD&GR), Ministry of Jal Shakti, Government of India (GOI) with financial aid from the World Bank. The objective of the project is to improve the extent and accessibility of water resources information and strengthen institutional capacity to enable improved water resources planning and management across India. The mission is to establish an effective and sound hydrologic database and Hydrological Information System (HIS), together with the development of consistent and scientifically based tools and design aids, to assist in the effective water resources planning and management of the implementing agencies.

NHP is intended for setting up of a system for timely and reliable water resources data acquisition, storage, collation and management. It will also provide tools/systems for informed decision making through Decision Support Systems (DSS) for water resources assessment, flood management, reservoir operations, drought management, etc. NHP also seeks to build capacity of the State and Central sector organisations in water resources management through the use of Information Systems and adoption of State-of-the-art technologies like Remote Sensing. NHP will improve and expand hydrology data and information systems, strengthen water resources operation and planning systems, and enhance institutional capacity for water resources management. NHP will contribute to the GOI Digital India initiative by integrating water resources information across State and Central agencies.

National Remote Sensing Centre (NRSC), as one of the Implementing Agencies under NHP, is engaged with generation of geo-spatial products & services pertaining to water resources sector, generation of high resolution Digital Elevation Models (DEM), development of flood early warning systems, decision support system development for irrigation water management, modelling & dissemination of hydrological products to support water resources management and capacity building to NHP stakeholders. The satellite data based geo-spatial products & services, mainly encompassing the following:

- Satellite Data/Geo-Spatial Data Hosting & Services through Bhuvan Web Portal
- Water Resources Information Products & Services (Satellite/Model derived – Bhuvan/India- Water Resources Information System (India-WRIS)/National Water Informatics Centre (NWIC))
- Customized Applications Development (Flood Forecasting, Irrigation Water Management)
- Hydro-conditioned Digital Elevation Model (Satellite & Aerial)
- Capacity Building (Customized Training & Hand Holding)

As part of various NHP technical studies carried out, NRSC has taken up "Glacial Lake Outburst Flood (GLOF) Risk Assessment of Glacial Lakes in the Himalayan Region of Indian River Basins". In this activity, it was proposed to prepare an updated inventory of glacial lakes, prioritization and selection of critical glacial lakes based on certain characteristics (such as glacial lake, glacier, topography and others), GLOF modelling and flood inundation simulation for selected few lakes using high resolution Digital Elevation Model (DEM) for downstream of the lakes along their river reach, and to assess GLOF risk.

As a result of initial outcome of this activity, an updated inventory of glacial lakes in Indus and Ganga River basin was generated using multispectral (MX) high resolution satellite data of Resourcesat-2 (RS-2) Linear Imaging Self Scanning Sensor-IV (LISS-IV) for mapping lakes with size ≥ 0.25 ha. The geo-spatial database of glacial lakes

has been used to prepare "Glacial Lake Atlas of Indus River Basin", already published NRSC-RSAA-WRG-WRAD-Nov2020-TR-0001702-V1.0 (Rao et al., 2020) and presently the "Glacial Lake Atlas of Ganga River Basin".

1.2 Glacial Lakes

Indian Himalayan Region (IHR) contains the world's largest number of glaciers and snow outside the Polar Regions and are aptly called third pole of the world. Many studies undertaken globally showed that glaciers around the world have been retreating since the industrial revolution, which began around eighteenth century. As the glaciers are thinning and retreating, resulting in associated glacier melt water lakes are expanding in size and new lakes continue to form. The lakes receiving melt water from glaciers are generally known as glacial lakes. A glacial lake is defined as water mass existing in a sufficient amount and extending with a free surface in, under, beside, and/or in front of a glacier and originating from glacier activities and/or retreating processes of a glacier. As glaciers retreat, the formation of glacial lakes takes place behind moraine or ice 'dam'. These damming materials are generally weak and can breach suddenly due to various triggering factors, leading to catastrophic floods. Such outburst floods are known as GLOF.

GLOFs are characterized by extreme peak discharges, with an exceptional erosion/transport potential; therefore, they can turn into flow-type movements (Emmer, 2017). Failure of such lake happens due to many factors which include erosion process, increase in water pressure, merging of an avalanche/rock into lake, nature of the damming materials etc., and this may lead to a GLOF event which could be highly disastrous in nature and create long-term degradation in the valleys, both physically and socio-economically (Mool et al., 2001b). Accordingly, Emmer et al., (2016) showed an annual nonlinear increase in the number of scientific publications focusing on GLOFs recently. Hence, monitoring of glacier associated lakes is very useful in the IHR to identify critical glacial lakes, for which a detailed inventory of glacial lakes and its type is required. According to their position relative to the glacier and damming mechanism, these glacial lakes can be classified into several types (Panda et al., 2014).

Inventorying glacial lakes located in these remote mountain areas with rugged terrain and inclement weather by traditional means is very tedious and difficult, hence Remote Sensing (RS) data plays a greater role in generating information on glacial lakes (Kulkarni, 1991; Berither et al., 2007; Wagnon et al., 2007; Raj, 2010; Cogley et al., 2011; Pratap et al., 2016; Gupta et al., 2019, Guru et al., 2019). Satellites with high spatial, spectral and temporal resolution sensors are useful in deriving lake information with better accuracy and repeatedly.

1.3 Previous Studies

Several studies have been taken up in the past to assess the glacial lake distribution in the Hindu Kush Himalayas (HKH), covering parts of eight countries viz., Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan, and lies within five river basins of Amu Darya, Indus, Ganga, Brahmaputra, and Irrawaddy (Komori, 2007; Gardelle et al., 2011; Wang et al., 2011; Wang et al., 2012; Nie et al., 2013; Raj et al., 2013; Wang et al., 2013; Worni et al., 2013; Che et al., 2014; Bambari et al., 2015; Zhang et al., 2015; Nie et al., 2017; Rounce et al., 2017; Nagai et al., 2017; Gupta et al., 2019; Guru et al., 2019; Shugar et al., 2020). But only few glacial lake inventories are available in public domain, amongst which the first inventory was prepared by the International Centre for Integrated Mountain Development (ICIMOD), Nepal, for the entire HKH region (covering the entire IHR within it), using satellite data of the Land Observation Satellite (Landsat) Thematic Mapper (TM) of the United States Geological Survey (USGS) and the Indian Remote Sensing satellite (IRS-1D) Linear Imaging and

Self-scanning Sensor-III (LISS-III) during 1999-2005, along with topographic maps published between the 1950s and 1982 (Mool et al., 2001a; Mool et al., 2001b; Mool et al., 2003; Bhagat et al., 2004; Roohi et al., 2005; Sah et al., 2005; Wu et al., 2005, Ives et al., 2010). This inventory has been revised in 2018 using Landsat TM and Enhanced Thematic Mapper Plus (ETM+) data of years 2004-07 ± 3 (Maharjan et al., 2018). Both glacial lake inventories prepared by the ICIMOD, have mapped lakes with size > 0.3 ha.

Second inventory of glacial lakes and water bodies in the IHR (within India only) was carried out by the NRSC, Hyderabad in collaboration with the Central Water Commission (CWC), New Delhi (NRSC-RS&GISAA-WRG-CWC-Lakes-May2011-TR255). Glacial lakes and water bodies located in all three major basins of Indus, Ganga, and Brahmaputra, of size > 10 ha were mapped using Indian Remote Sensing (IRS) Advanced Wide Field Sensor (AWiFS) data for the year 2009 (NRSC, 2011). Subsequently, monthly monitoring of these lakes (> 50 ha) was carried out using satellite data for the months of June to October during the years 2011 to 2015.

Third latest glacial lake inventory is prepared by the Space Application Centre (SAC), Ahmedabad i.e. "National Wetland Atlas: High Altitude Lakes of India", using IRS-P6 LISS-III, comprising high altitude lake information of the IHR, within Indian administrative region only (Panigrahy et al., 2012). In this atlas, wetlands of size > 2.25 ha were mapped as a polygons and less than that were mapped as a points, using satellite data for the period of 2006-08.

1.4 Highlights of the Atlas

The highlights of the present atlas:
- The present atlas is first of its kind depicting spatial distribution of glacial lakes of size ≥ 0.25 ha in Ganga River basin mapped using high resolution satellite data
- The atlas provides the details of all the glacial lakes in entire catchment of Ganga River basin, both within Indian and transboundary region
- The atlas contain details of area range-wise glacial lakes along with 9 categories of types. Further, the atlas present the distribution of glacial lakes in terms of area vs. type, elevation, area vs. elevation and type vs. elevation, at basin, subbasin, administrative and transboundary regions
- The atlas also provides comprehensive list of all glacial lakes with unique ID considering hydrological, geometrical, geographical, topographical attribute information

The expected utility of the atlas:
- The atlas provides a comprehensive & systematic glacial lake database for Ganga River basin
- In the context of climate change impact analysis, the atlas can be used as reference data for carrying out change analysis, both with respect to historical and future time periods
- The atlas also provides authentic database for regular or periodic monitoring changes in spatial extent (expansion/shrinkage), and formation of new lakes
- The atlas can also be used in conjunction with glacier information for their retreat and climate impact studies
- The information on glacial lakes like their type, hydrological, topographical, and associated glaciers are useful in identifying the potential critical glacial lakes and consequent GLOF risk
- Central and State Disaster Management Authorities can make use of the atlas for disaster mitigation planning and related programs
- Can be used in Detailed Project Report (DPR) preparation for new hydropower/multi purpose project

Vegetation

Ridge

Hill Shadow

Glacier

Glacier

Lake

Lake

Glacier

Imja Tsho Glacial Lake at the snout of Glacier in
Kosi Subbasin, located in Nepal,
as seen in FCC satellite image

Satellite: Resourcesat-2
Sensor: LISS-IV MX
Date of Image: 07.11.2016

2. STUDY AREA

2.1 Overview

The IHR consist of three major river systems of Indus, Ganga, and Brahmaputra, stretches over four countries viz., India, China, Nepal and Bhutan, and on the basis of physiography it has been divided into four mountain regions viz., Eastern Himalayas, Central Himalayas, Western Himalayas, and the Karakoram Mountain range. The Ganga River basin is unique in the sense that it contains 9 of the 14 highest peaks in the world over 8,000 m in height, including Mt. Everest which is the high peak of Ganga River basin. The other peaks over 8,000 m in the basin are Kanchenjunga, Lhotse, Makalu, Cho Oyu, Dhaulagiri, Manaslu, Annapurna, and Shishapangma. The Ganga River basin extends over Central Himalayas in India, Nepal, Tibet (China), and Bangladesh.

The Ganga River originates as the Bhagirathi from the Gangotri group of glaciers in the Himalayas at an elevation of about 7,010 m amsl, in the Uttarkashi district of Uttarakhand, which has been joined by the Alaknanda at Devprayag, and the combined stream assumes the name 'Ganga' (origin and confluence has been shown in Figure 1). River flows through the highly terrain mountain region and debouches into the plains at Sukhi (near Rishikesh). It is joined by a large number of tributaries on both the banks in the course of its total run of about 2,525 Km before its outfall into the Bay of Bengal. The delta of the Ganga River is said to begin at the Farakka barrage in West Bengal, where the river divides into two arms namely the Padma which flows to Bangladesh and the Ganga which flows through West Bengal. Ganga River basin from its origin to the foothills of Himalayas with a catchment area of 2,47,110 Km² is considered in the present study, which extends from latitude 26.35° N to 31.46° N and from longitude 77.05° E to 88.95° E.

Figure 1: The Bhagirathi origin from Gaumukh (left) and confluence with the Alaknanda at Devprayag (right) (Source: Wikipedia, Left - 05.09.2009 and Right - 01.03.2010)

2.2 Hydrological Divide

Major river flowing in the Ganga River basin is Yamuna, joining the main river on the right, whereas rivers like Sarda, Ghaghara, Gandak, and Kosi joining on the left. Considering hydrological setting of the aforesaid rivers, Ganga River basin is divided in 11 subbasins viz., Yamuna, Upper Ganga, Ramganga, Sarda, Ghaghara, Rapti, Gandak, Bhagmati, Kamla, Kosi, and Lower Ganga. Figure 2 shows the location of the study area with RS-2 LISS-IV satellite images. Table 1 shows the catchment area of each of the above subbasins.
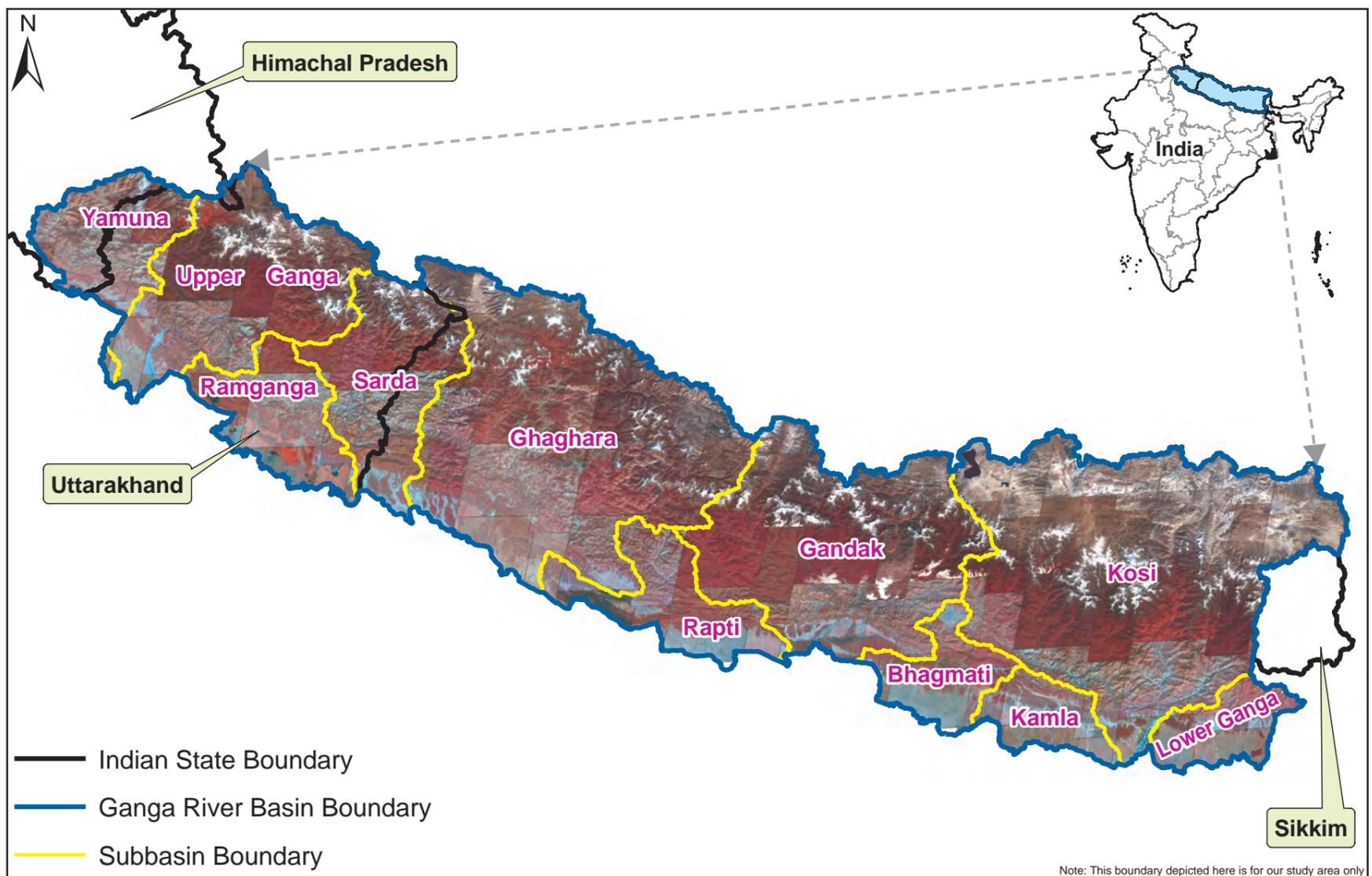
Figure 2: Location of Ganga River basin showing RS-2 LISS-IV images

Table 1: Details of subbasins of Ganga River basin

S. No.	Subbasin	Area (Km²)	Area (%)
1	Bhagmati	7,635	3.09
2	Gandak	36,465	14.76
3	Ghaghara	53,072	21.48
4	Kamla	6,106	2.47
5	Kosi	59,709	24.16
6	Lower Ganga	6,543	2.65
7	Ramganga	11,455	4.64
8	Rapti	11,423	4.62
9	Sarda	17,326	7.01
10	Upper Ganga	25,675	10.39
11	Yamuna	11,701	4.73
	Total	**2,47,110**	**100.00**

2.3 Hydrology

All the principal tributaries of the Ganga River system are fed by snow and glaciers in the upper parts of their mountainous catchments. The snow accumulation in their upper catchments usually starts from October to March months reaching peak in January/February. The river flows are at minimum during the winter months of December to March. When snow and glaciers start melting during summer months of April to June, river flows gradually increase and accelerated further by rains during July to September. The Ganga River basin carries average annual water potential of about 525 Billion Cubic Metre (BCM), of which total utilizable surface water resource in the basin is 250 BCM. The Ghaghara, Kosi, and Gandak combined carry almost half, and the Yamuna, Ramganga, and other major and minor tributaries combined constitute the remainder of the total supply of the system (Ganga Basin Report, 2014).

2.4 Topography

The study area mainly resides in the Central Himalayan region, which is also known as one of the main topographic division of the Indian subcontinent (Ganga Basin Report, 2014). The Central Himalayas comprises the Himalayan ranges including their numerous snow peaks rising above 7,000 m and each of these peaks is surrounded by snow fields and glaciers. All the tributaries are characterized by well regulated flows and assured supply of water throughout the year by these glaciers. The elevation of the study area ranges between 45 m and 8,848 m amsl, where glaciers and glacial lakes are mostly distributed in the higher altitude region. The mean elevation of the study area is 4,374 m amsl. Slope in the entire study area varies up to a maximum of 86.60°, while the mean slope in the Ganga River basin is 22.31°. Hypsometric curve is a graph which shows the proportion of land area that exist at various elevations by plotting relative area against relative height, as shown in Figure 3 for the study area.
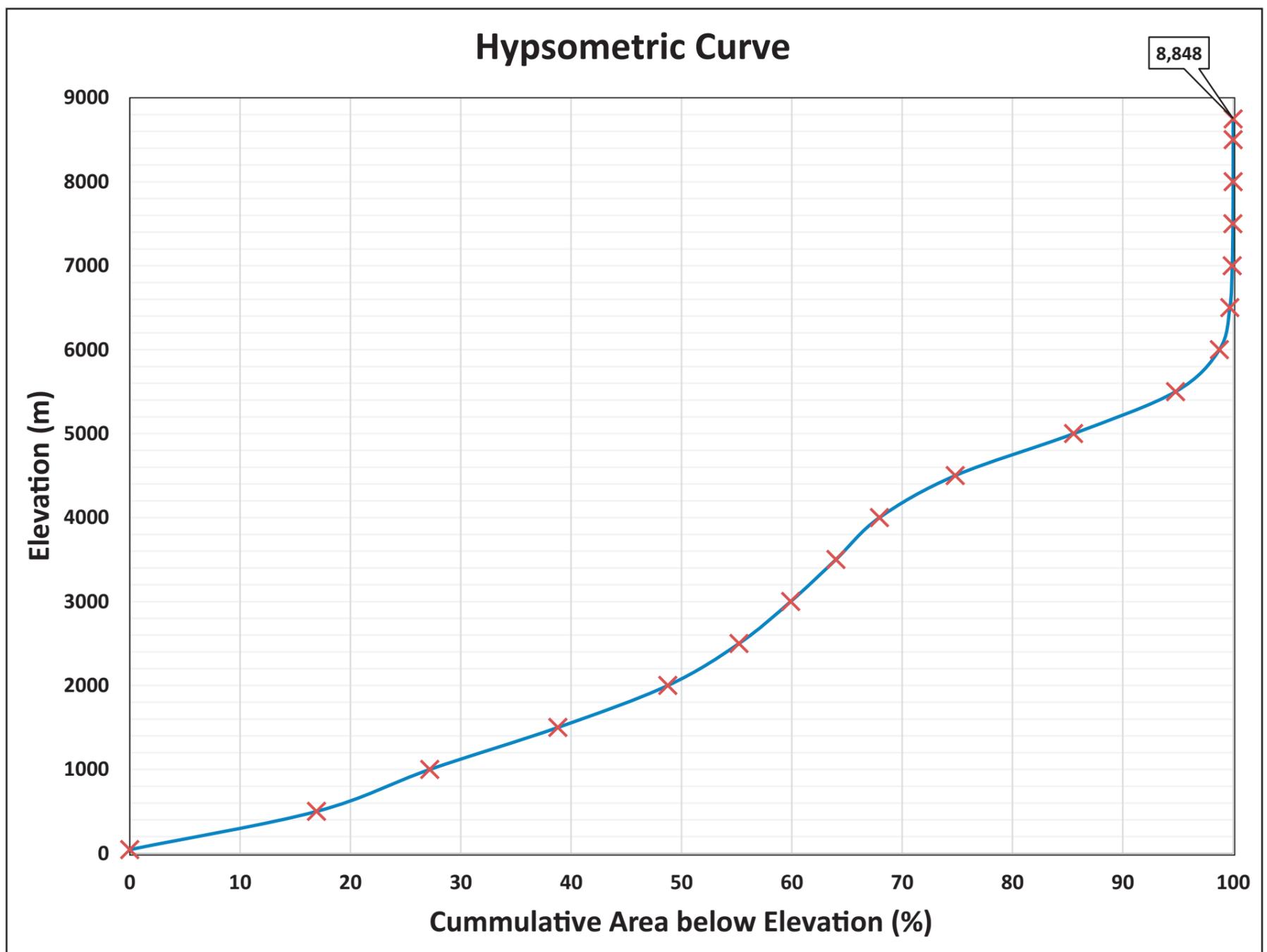
Figure 3: Hypsometric curve of the study area

2.5 Climate

Climate over the Ganga River basin is mainly tropical and subtropical to temperate subhumid on the plains. The higher elevation zones in the Himalayan ranges especially in parts of Uttarakhand and Himachal Pradesh, experience lower temperatures than the other parts of the basin within India. Lowest annual precipitation < 500 mm is observed in the lowlands to a maximum of > 2,200 mm in upper region. The study area receives total average annual precipitation of approximately 1,200 mm. The average temperature in the basin ranges between 9°C to 40°C, where the minimum temperature is usually high mainly because of the lower plains of the basin.
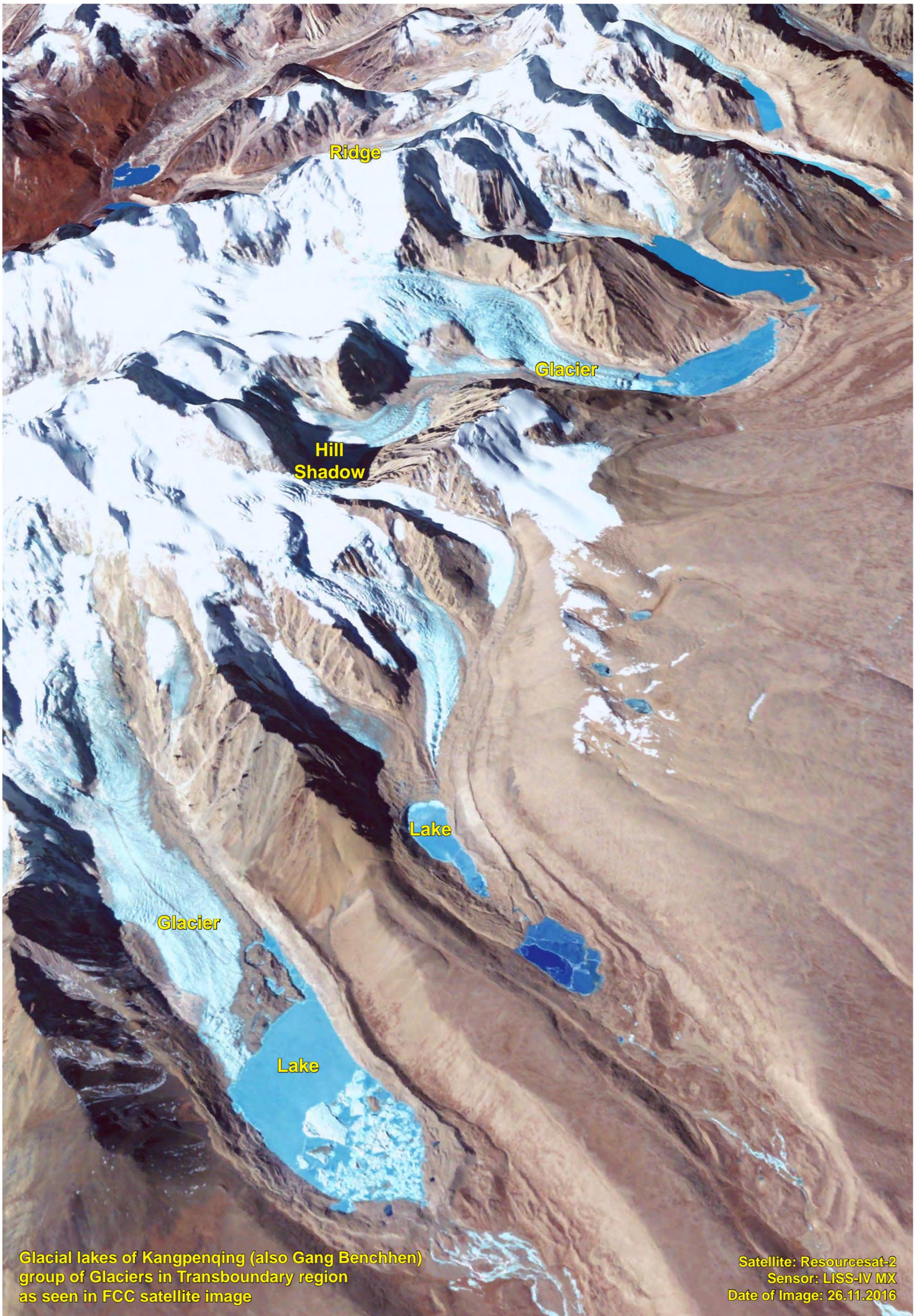
Ridge

Glacier

Hill
Shadow

Lake

Glacier

Lake

Glacial lakes of Kangpenqing (also Gang Benchhen)
group of Glaciers in Transboundary region
as seen in FCC satellite image

Satellite: Resourcesat-2
Sensor: LISS-IV MX
Date of Image: 26.11.2016

3. DATA USED

Earth observation satellites capture the data repeatedly in various spectral ranges and at different spatial and radiometric resolutions. For inventorying glacial lakes, high to medium resolution datasets are proved to be useful by many research studies (Bolch et al., 2010; Mergili et al., 2013; Wang et al., 2013; Zhang et al., 2015; Gupta et al., 2019, Guru et al., 2019). Data captured between September and December were mostly used because the presence of snow or cloud cover during this period is minimum. USGS satellite data of Landsat 5 and 7 (TM and ETM+) has been used widely for mapping glacial lakes due to free accessibility. Whereas, IRS satellite data from sensors of AWiFS, LISS-III, LISS-IV has also been used for such inventory.

In the present study, high resolution Resourcesat-2 LISS-IV satellite images with spatial resolution of 5.8 m covering a swath of 70 × 70 Km have been used for inventorying glacial lakes. Most of the images used for inventorying were of 2016-18 (84%) and remaining images pertain of previous years due to non-availability of cloud-free and snow-free images for the recent years. Majority of images were of September and December months (78%) due to less snow and cloud cover, and rest 22% images were of other months. Figure 4 shows the layout of the RS-2 LISS-IV scenes (path-wise) procured for the Ganga River basin along with its details in Table 2. The layout of satellite scenes is divided into paths (shown in separate colours) and rows (row numbers shown in the layout).
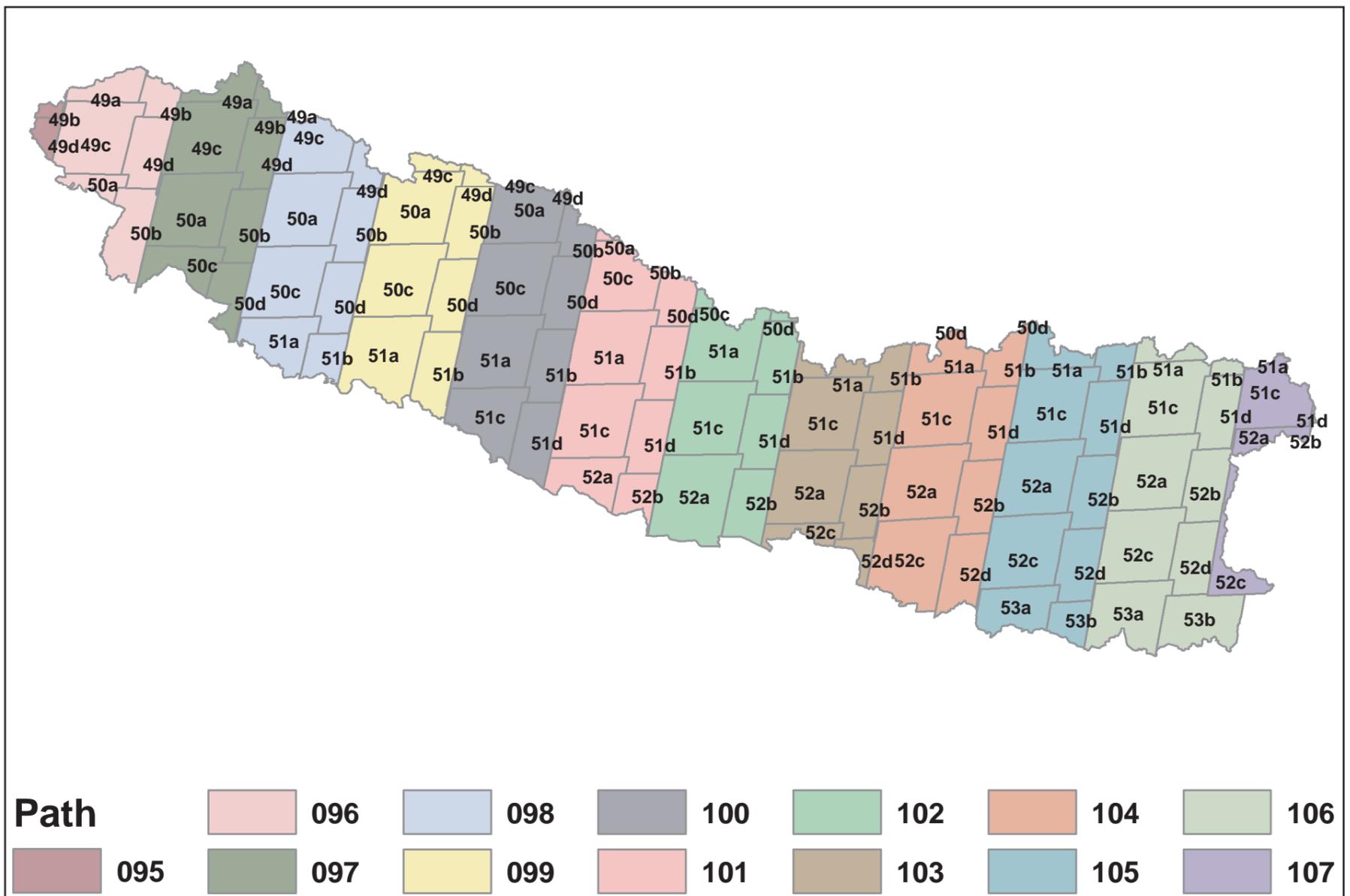
Figure 4: Layout of Resourcesat-2 LISS-IV scenes used in this study

Table 2: Details of satellite scenes used for inventory

	Other Months	Sep - Dec	Total
Prior to 2016	5	12	17
2016-18	18	70	88
Total	**23**	**82**	**105**

Digital Elevation Model (DEM) of Cartosat satellite with 10 m spatial resolution has been used for topographic information and watershed boundary generation. Figure 5 shows elevation range map of the study area i.e. Ganga River basin. Other information like names of lakes and rivers has been gathered from digital toposheets available from University of Texas - Toposheet Library at 1:250,000 scale and Tibet Map Institute at 1:100,000 scale (U.S. Army Map Service 1955; Andre 2017).
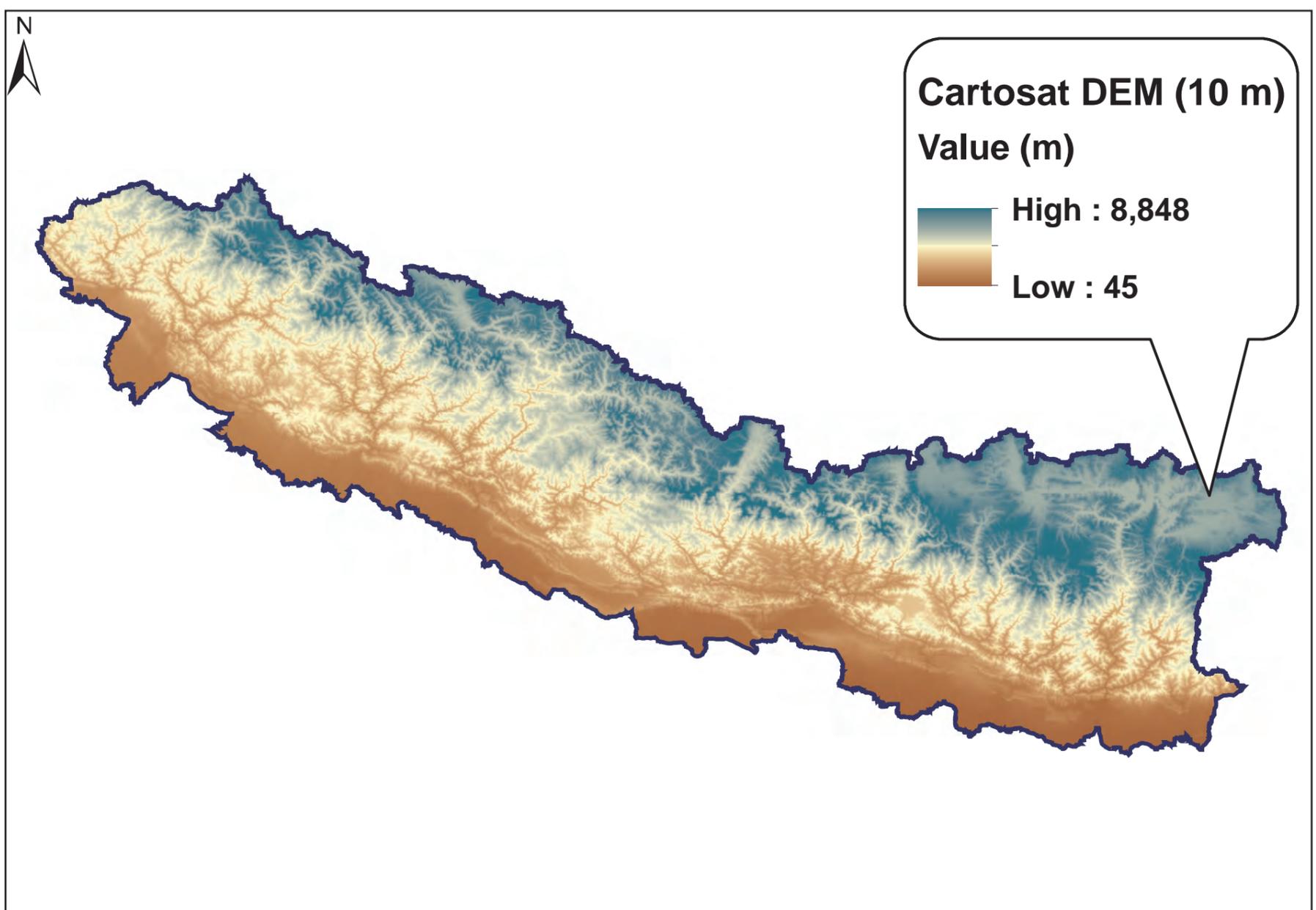
Figure 5: Cartosat DEM of 10 m spatial resolution covering the Ganga River basin

4. METHODOLOGY

4.1 Satellite Data Interpretation

The spectral reflectance curve of water in the visible spectrum starts with a low in Blue region (0.4 to 0.5 μm), reaches peak in Green region (0.5 to 0.6 μm), decreases in Red region (0.6 to 0.7 μm) and probably the most distinctive characteristic is the energy absorption at Near InfraRed (NIR) wavelengths. Identifying and delineating water bodies with remote sensing data are carried out easily in near infrared wavelengths because of this absorption property in IR region. However, various physical conditions of water bodies (water depth, turbidity, chlorophyll content, etc.) manifest spectral changes. As a result of various conditions of lakes, the water in satellite images in False Colour Composite (FCC) ranges in appearance from light to dark blue to black. In the case of frozen lakes, it appears white.

Glacial lake sizes are generally small, having circular, semi-circular, or elongated shapes with very fine texture and are generally associated with glaciers in high altitude areas. Certain types of glacial lakes, like erosion and cirque lakes are not necessarily associated with glaciers. Knowledge of the physical characteristics of the glacial lakes, and their associated features is always essential for the interpretation of the images.

Satellite data interpretation can be done using visual image interpretation keys such as colour, size, tone, texture, pattern, association, shape, shadow, and orientation. A number of remote sensing methods had been developed for glacial lake detection and mapping or development of inventory (Kääb 2000; Mool et al., 2001a; Huggel et al., 2002; Huggel et al., 2006; Ives et al., 2010). Manual or automated lake mapping methods have certain difficulties in identifying the lakes, which are described in the following section. An attempt was made to study the accuracy of mapping of glacial lakes using multiple automated methods along with visual interpretation, the details of which are given in Annexure-1. From this study, it was concluded that visual interpretation method was best accurate method. Hence, in the present study glacial lakes and their different types are identified and mapped using RS-2 LISS-IV multispectral images using visual interpretation method.

Difficulties in Lake Identification:

Glacial lake identification can be done either using visual interpretation or automatic mapping methods. The automatic mapping procedures have limitations due to varying terrain conditions like lakes situated in the shadow portions of mountains, presence of snow cover, cloud cover, and partly frozen lakes, etc. In the presence of snow cover on the glacier tongue or glacier's ablation area where many Supra-glacial lakes may present, both methods have limitations and difficulties.

As lake water absorbs the incident radiation making it appear in darker tone and colour in the standard FCC of satellite data, similar response also prevails over shadow region of clouds or mountains on surface, which may lead to incorrect mapping. In fact, a mountain shadow covering a lake partly/completely within its vicinity, making it difficult to accurately map the lake boundary.

Many lakes due to inclement terrain condition, can be under shadow of high peaks and will get missed in both ways of mapping. On the contrary, a lake can also present in white colour while it is in frozen form due to cold

weather conditions over the area, then definitely it will not get classified when mapped with automatic algorithm. Whereas, frozen lakes can be identified and mapped using visual interpretation to some extent.

Challenges in Automatic Mapping:

In the IHR, due to high and inclement terrain surface and due to near vertical acquisition of satellite images, some lakes get covered with shadows of mountains, which create problems in identifying glacial lakes. Also identification of lakes with high turbidity, partial ice covered lakes and the lakes in shadow areas are misclassified by automatic methods. Glacial lake mapping is always a semi-automatic approach because even after applying any of that methods, it should always be followed by the post processing i.e. correcting the errors using visual interpretation. Even in all cases, automatic mapping will never give the exact and accurate boundary of the lake, leading to necessary manual corrections.

Reasoning for Visual Interpretation:

Although automatic mapping methods can speed up the detection of glacial lakes, but these methods could not be applied to the entire Himalayan region due to lot of variations in satellite scenes (seasons/years) and problems mentioned above. For example, if lakes are frozen or covered with snow or cloud and lies in a shadow area, they cannot be detected using these automatic methods. In such cases, the manual interpretation method will be helpful to map these lakes. Thus, any mapping of glacial lakes can be automated up to a certain extent only. So, visual image interpretation keys and technique will give accurate results and avoids misclassification. Therefore, in this present study, glacial lakes and its type identification, and its mapping for the entire Ganga River basin (within IHR) has been done manually using visual interpretation. High resolution satellite data available on Bhuvan/Google Earth has been used on need basis in finalizing various features of glacial lake database.

Limitations:

The RS-2 LISS-IV MX data used for glacial lake database preparation sporadically covered with cloud and seasonal/permanent snow. Also, the Himalayan region being highly varying topography with steep slopes, the satellite data has hill shadows. Thus few glacial lakes would not have been mapped owing to the following constraints:

- Presence of snow or cloud over the glacial lakes
- Glacial lakes under frozen condition
- Glacial lakes under mountain shadow

4.2 Types of Glacial Lake

Various researchers have proposed glacial lakes classification schemes based on dam type, process of lake formation, topographic feature, and geographical position (Hewitt 1982; Liu and Sharma 1988; Clague and Evans 2000; Mool et al., 2001a, 2001b). Lakes located on the glacier surface can be mapped using satellite data, but there are englacial and subglacial lakes that may also exist, but cannot be mapped from aerial/optical satellite images, requires ground based instrument (Yao et al., 2018). Majorly surface glacial lakes are classified in 4 classes and 10 subclasses, i.e. Moraine-dammed lake, Ice-dammed lake, Glacier Erosion lake (also known as Bed-rock lake), and Other Glacial lake. Two character symbol has been used for glacial lake classification, in

which first letter (uppercase) represents lake type and second letter (lowercase) within brackets represents lake subtype, for example, M(e) for End-moraine dammed lake. Details of types of lakes are given in Table 3 and their appearance in satellite images are shown in Figure 6.
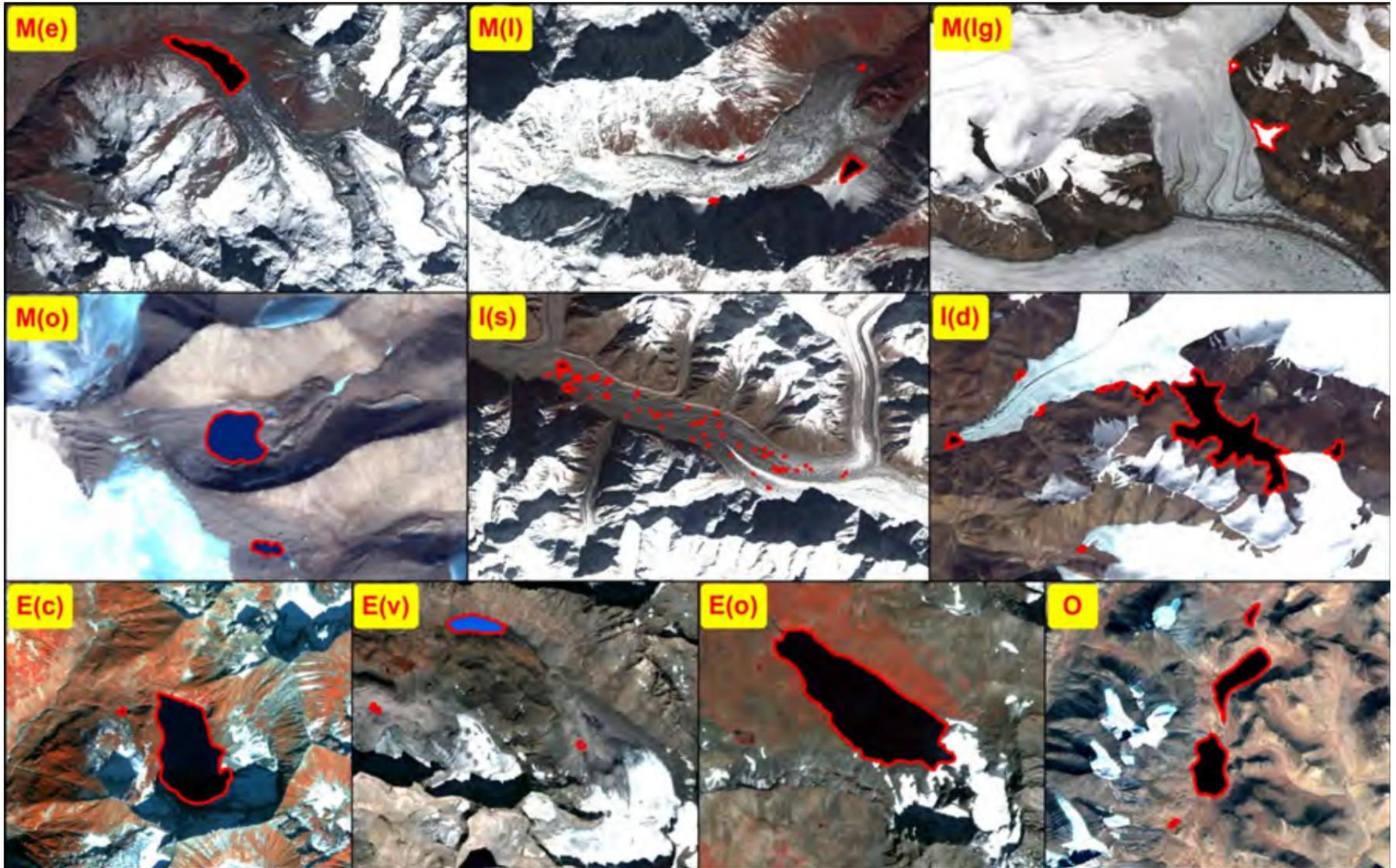
Figure 6: Types of Glacial Lake

Table 3: Glacial lake types and their identification keys

S.No.	Lake Type	Lake Subtype	Code	Identification Keys
1	**Moraine-dammed Lake**	End-moraine Dammed Lake	**M(e)**	Lake dammed by end (terminal) moraines
2		Lateral Moraine Dammed Lake	**M(l)**	Lake dammed by lateral moraine(s) not in contact with glacial ice
3		Lateral Moraine Dammed Lake (with Ice)	**M(lg)**	Lake dammed by lateral moraine(s) in contact with glacial ice
4		Other Moraine Dammed Lake	**M(o)**	Lake dammed by other moraines
5	**Ice-dammed Lake**	Supra-glacial Lake	**I(s)**	Pond or lake on the surface of a glacier
6		Glacier Ice-dammed Lake	**I(d)**	Lake dammed by glacier ice with no lateral moraines
7	**Glacier Erosion Lake**	Cirque Erosion Lake	**E(c)**	A small pond occupying a cirque
8		Glacier Trough Valley Erosion Lake	**E(v)**	Lakes formed in the glacier trough as a result of the glacier erosion process
9		Other Glacial Erosion Lake	**E(o)**	Bodies of water occupying depressions formed by the glacial erosion process
10	**Other Glacial Lake**	Other Glacial Lake	**O**	Lakes formed in a glaciated valley, and fed by glacial melt, but damming material not directly part of the glacial process

4.3 Lake Attribute Information

A total of 22 attributes has been given to all mapped lake features in the geodatabase, which are broadly consisting information grouped in five different categories as shows in Table 4.

Table 4: Details of glacial lake attributes

S.No.	Category	Attribute
1	Hydrological	Basin, subbasin, river, lake name
2	Geometrical	Maximum length, mean width, surface area
3	Geographical	Latitude, longitude, region, state, district, toposheet 250k, toposheet 50k
4	Topographical	Elevation, aspect
5	Lake Information	Feature types, glacial lake type, lake ID
6	Data Source Information	Source of database, source of elevation, date of pass

Typically, lake ID is given in 12 alpha-numeric character format like "0253N1300271", where first two digits '02' refers to Basin code which is Ganga (01-Indus and 03-Brahmaputra), next five characters '53N13' refers to the 1:250,000 (53N) and 1:50,000 (53N13) scale SOI Toposheet number, and the last five digits refers to the sequential number of each lake sorted from top left to bottom right. A typical example of the glacial lake database generated is given below in Table 5 along with fields and format.

Table 5: Typical example of glacial lake attribute database

S.No.	Database Fields	Type	Format / Unit	Lake Attribute
1	ID No	String	Text	0253N1300271
2	Toposheet 250K	String	Text	53N
3	Toposheet 50K	String	Text	53N13
4	Latitude*	Float	Decimal Degree	30.901
5	Longitude*	Float	Decimal Degree	79.754
6	Basin	String	Text	Ganga
7	Subbasin	String	Text	Upper Ganga
8	River	String	Text	Dhauliganga River
9	Type (GL/WB)	String	Text	Glacial Lake
10	Name	String	Text	Basudhara Tal
11	Glacial Lake Type	String	Text	M(e): End-moraine Dammed Lake
12	Surface Area	Float	ha	22.035
13	Length	Float	Km	0.791
14	Mean Width	Float	Km	0.270
15	Elevation*	Integer	m (amsl)	4677
16	Aspect	String	Text	SE
17	Source of Database	String	Text	RS-2 LISS-IV
18	Date of Pass	Date	DDMMYYYY	20112016
19	Source of Elevation	String	Text	Cartosat DEM
20	Region	String	Text	India
21	State	String	Text	Uttarakhand
22	District	String	Text	Chamoli

*Latitude, longitude, and elevation has been taken at the centroid of the lake

5. RESULTS

The mapped glacial lakes are analyzed for their distribution in terms of area, type, and elevation, at basin, subbasin, administrative and transboundary level. Area of mapped glacial lakes is ranging from a minimum of 0.25 ha to a maximum of 540.55 ha. Details of glacial lakes inventoried for the Ganga River basin is given in Annexure-II. The results are discussed in subsequent sections:

5.1 Ganga Basin Level Statistics

Area range-wise Distribution

A total of 4,707 glacial lakes (≥ 0.25 ha) were identified and mapped using RS-2 LISS-IV images for the entire Ganga River basin, with a total lake water spread area of 20,685.12 ha. Glacial lakes has been distributed in 6 different classes of area ranges viz., 0.25 - 0.5 ha, 0.5 - 1 ha, 1 - 5 ha, 5 - 10 ha, 10 - 50 ha and ≥ 50 ha, where area ranges indicate values ranging from the lower value (including) up to the upper value (excluding), for ex: 0.25 - 0.5 ha range include values ranging from 0.25 ha up to < 0.5 ha. Table 6 and Figure 7 shows the area range-wise distribution for the entire basin. About 4,035 (85.72%) lakes are with < 5 ha lake area contributing to 23.13% of total lake area. The remaining lakes with ≥ 5 ha in size are 672 (14.28%) contributing to 76.87% of total lake area in the basin. Details of lakes ≥ 50 ha is given in Annexure-III.

Table 6: Area range-wise distribution of Glacial Lakes (GL) in Ganga River basin

S. No.	Lake Area Range (ha)	No. of Lakes	Total Lake Area (ha)	Total Lake Area (%)
1	0.25 - 0.5	1,279	452.30	2.19
2	0.5 - 1	1,157	824.04	3.98
3	1 - 5	1,599	3,508.94	16.96
4	5 - 10	315	2,184.89	10.56
5	10 - 50	299	5,938.21	28.71
6	≥ 50	58	7,776.74	37.60
	Total	**4,707**	**20,685.12**	**100.00**
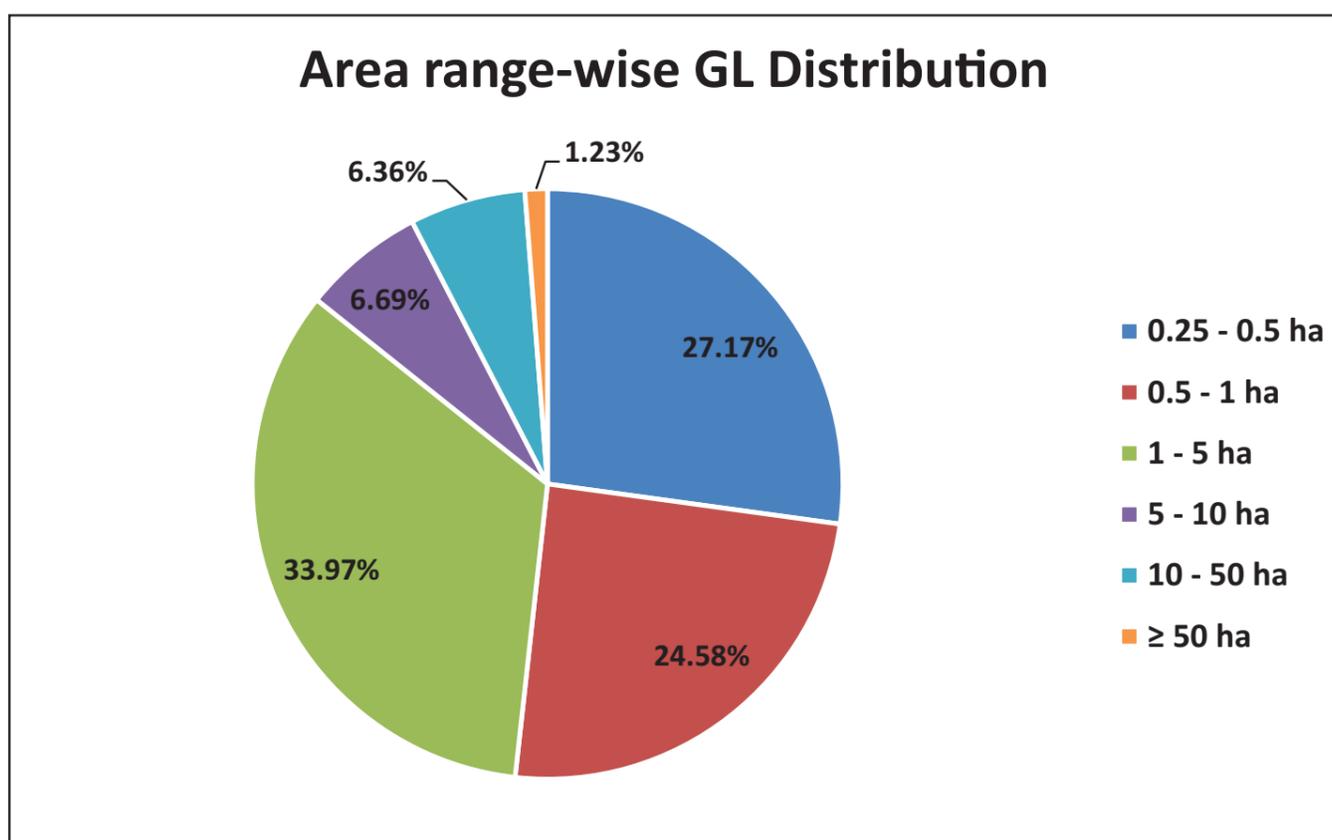
Figure 7: Area range-wise distribution of GL in Ganga River basin

Type-wise Distribution

Distribution of different types of glacial lake in the entire Ganga River basin is given in Table 7 and Figure 8. Out of 10 types of lake described in the previous section, 9 types of lake are present in the basin except Glacier Trough Valley Erosion Lake (Ev). Amongst 9 types of glacial lake, Other Glacial Erosion lake is found to be the maximum with 1,744 (37.05%) occupying a total lake extent of 4,612.02 ha at 22.30% in the basin. Two other types of lake, namely, Other Moraine Dammed and Supra-glacial lakes are 1,740 (36.97%) and 617 (13.11%), extend over an area of 4,489.35 ha (21.70%) and 566.14 ha (2.74%) respectively.

Table 7: Type-wise distribution of GL in Ganga River basin

S. No.	Code	Types of Glacial Lake	No. of Lakes	Total Lake Area (ha)	Total Lake Area (%)
1	M(e)	End-moraine Dammed Lake	260	8,591.78	41.53
2	M(l)	Lateral Moraine Dammed Lake	100	568.12	2.75
3	M(lg)	Lateral Moraine Dammed Lake with Ice	9	5.48	0.03
4	M(o)	Other Moraine Dammed Lake	1,740	4,489.35	21.70
5	I(s)	Supra-glacial Lake	617	566.14	2.74
6	I(d)	Glacier Ice-dammed Lake	1	2.45	0.01
7	E(c)	Cirque Erosion Lake	123	973.77	4.71
8	E(o)	Other Glacial Erosion Lake	1,744	4,612.02	22.30
9	O	Other Glacial Lake	113	876.01	4.23
		Total	**4,707**	**20,685.12**	**100.00**
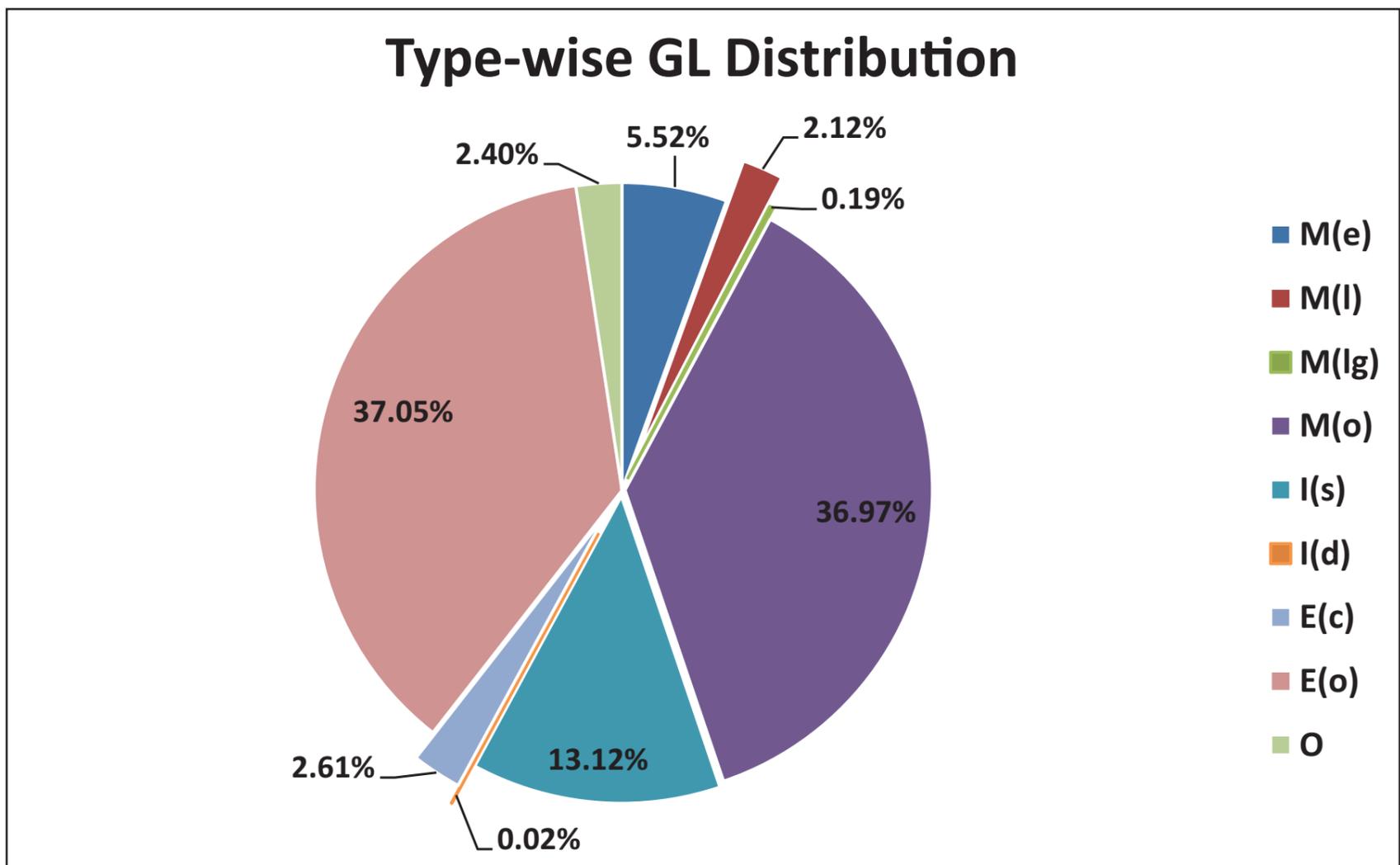
Figure 8: Type-wise distribution of GL in Ganga River basin

Area range-Type-wise Distribution

Glacial lake distribution by area range vs. type-wise is given in Table 8 and Figure 9. The lakes with < 5 ha in size (85.72%) are dominant with Other Moraine Dammed lake type (38.74%) followed by Other Glacial Erosion (38.64%) and Supra-glacial lake (14.94%). The lakes with ≥ 5 ha (14.28%) are dominated by Other Glacial Erosion lakes (27.53%) followed by End-moraine Dammed lake (27.23%) and Other Moraine Dammed lake (26.34%). All types of Moraine-dammed glacial lakes, which constitute about 44.81% are predominantly with < 5 ha in water spread.

Table 8: Area range-wise vs. Type-wise distribution of GL in Ganga River basin

S. No.	Lake Area Range (ha)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	0.25 - 0.5	5	22	4	462	354	0	4	400	28	1,279
2	0.5 - 1	12	24	4	484	166	0	5	433	29	1,157
3	1 - 5	60	35	1	617	83	1	49	726	27	1,599
4	5 - 10	41	6	0	106	6	0	34	115	7	315
5	10 - 50	100	9	0	68	8	0	31	65	18	299
6	≥ 50	42	4	0	3	0	0	0	5	4	58
	Total	260	100	9	1,740	617	1	123	1,744	113	4,707
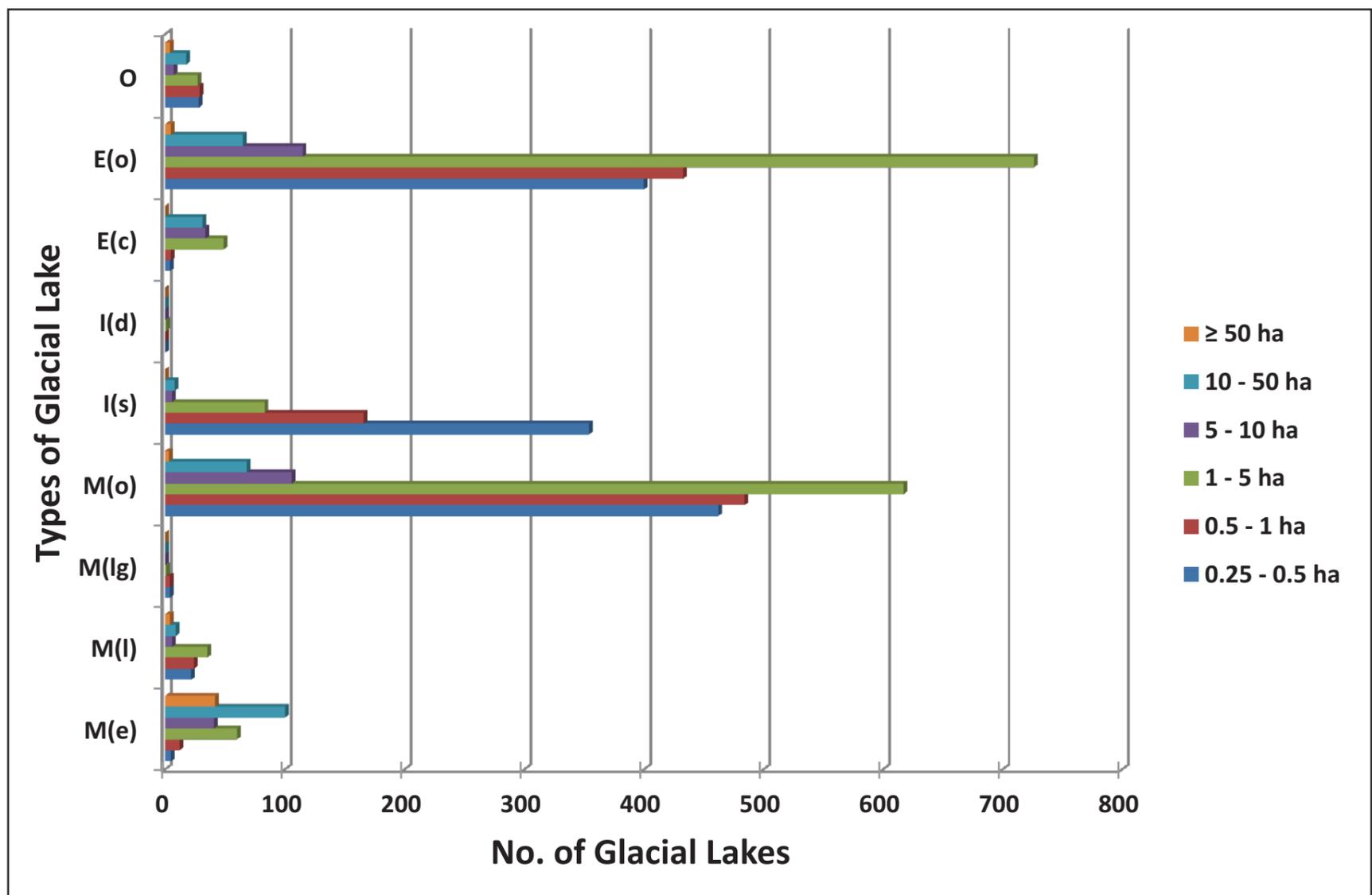
Figure 9: Area range-wise vs. Type-wise distribution of GL in Ganga River basin

Elevation range-wise Distribution

Elevation ranges over the entire study area has been classified into four different categories viz., low altitude (up to 3,000 m), medium altitude (3,001 - 4,000 m), high altitude (4,001 - 5,000 m), and very high altitude (> 5,000 m). Table 9 and Figure 10 shows the distribution of the glacial lakes in the Ganga River basin as per elevation range-wise. Majority of glacial lakes are situated above 4,000 m elevation i.e. 4,644 (98.66%) with total lake area of 20,451.70 ha (98.87%) and remaining 1.34% glacial lakes are below 4,001 m elevation.

Table 9: Elevation range-wise distribution of GL in Ganga River basin

S. No.	Elevation Range (m)	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	up to 3,000	1	9.87	0.05
2	3,001 - 4,000	62	223.55	1.08
3	4,001 - 5,000	1,855	7,374.89	35.65
4	> 5,000	2,789	13,076.81	63.22
	Total	**4,707**	**20,685.12**	**100.00**
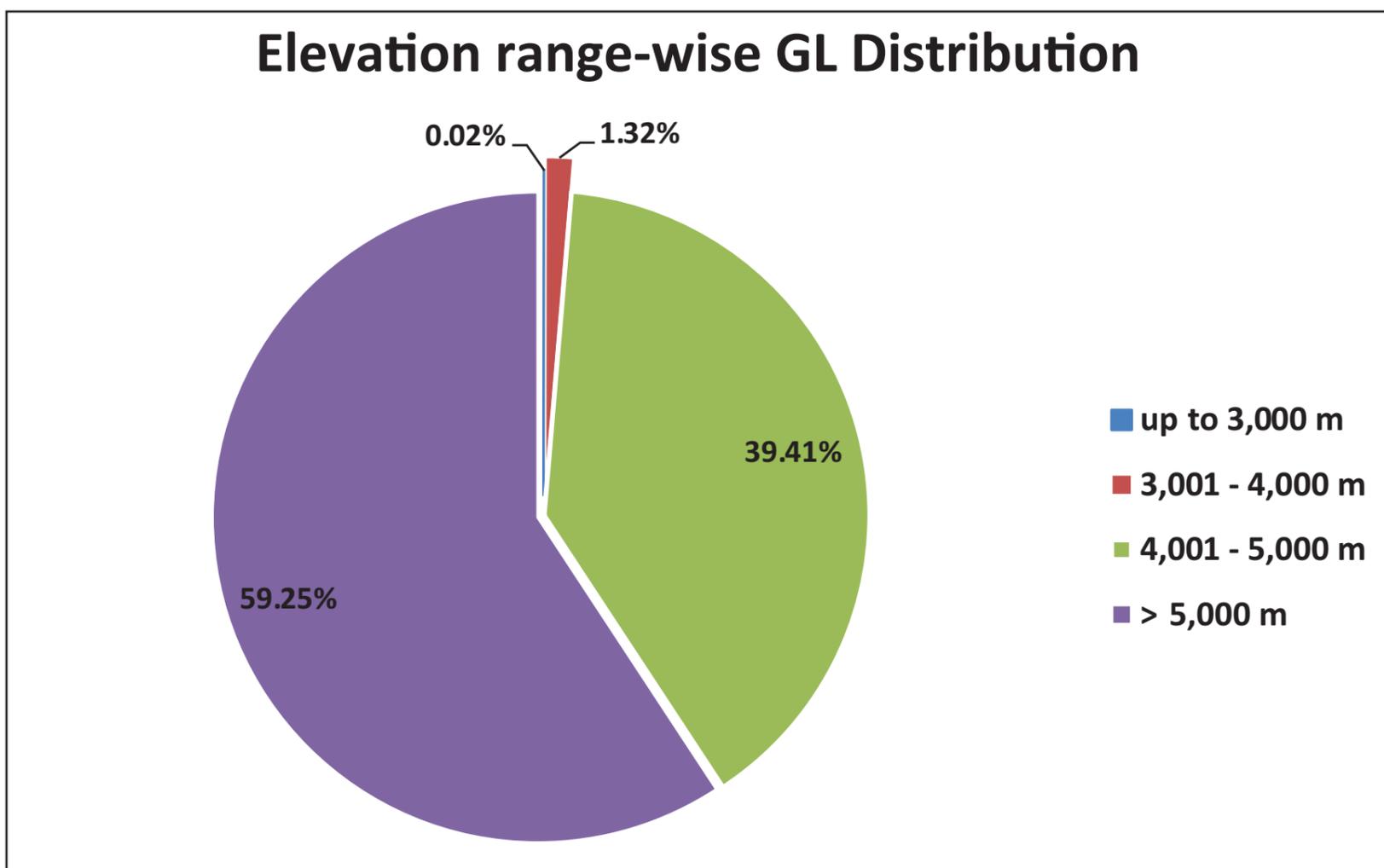
Figure 10: Elevation range-wise distribution of GL in Ganga River basin

Area-Elevation range-wise Distribution

Glacial lake distribution has been analyzed as per area range vs. elevation range-wise, given in Table 10 and Figure 11. It is noted that, about 59.25% of glacial lakes (2,789) are situated in very high altitude range i.e. > 5,000 m amsl, which also constitutes maximum total lake area within that range i.e 63.22%. However, very few glacial lakes (63) lies up to 4,000 m amsl, has maximum of its lakes with 0.25 - 0.5 ha lake area range. Figure 11 shows that maximum of lakes lying in very high altitude range is of size ranging 1 - 5 ha (i.e. 928), followed by lakes in high altitude range within in 1 - 5 ha (i.e. 659).

Table 10: Area range-wise vs. Elevation range-wise distribution of GL in Ganga River basin

| S. No. | Lake Area Range (ha) | Elevation Range (m) | | | | | | | | Total | |
| | | up to 3,000 | | 3,001 - 4,000 | | 4,001 - 5,000 | | > 5,000 | | | |
		No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Lake Area (ha)
1	0.25 - 0.5	0	0.00	21	6.90	486	173.33	772	272.07	1,279	452.30
2	0.5 - 1	0	0.00	17	12.44	426	305.22	714	506.38	1,157	824.04
3	1 - 5	0	0.00	12	33.16	659	1,465.56	928	2,010.22	1,599	3,508.94
4	5 - 10	1	9.87	5	34.15	137	967.00	172	1,173.87	315	2,184.89
5	10 - 50	0	0.00	7	136.90	128	2,392.37	164	3,408.94	299	5,938.21
6	≥ 50	0	0.00	0	0.00	19	2,071.42	39	5,705.32	58	7,776.74
	Total	**1**	**9.87**	**62**	**223.55**	**1,855**	**7,374.90**	**2,789**	**13,076.80**	**4,707**	**20,685.12**
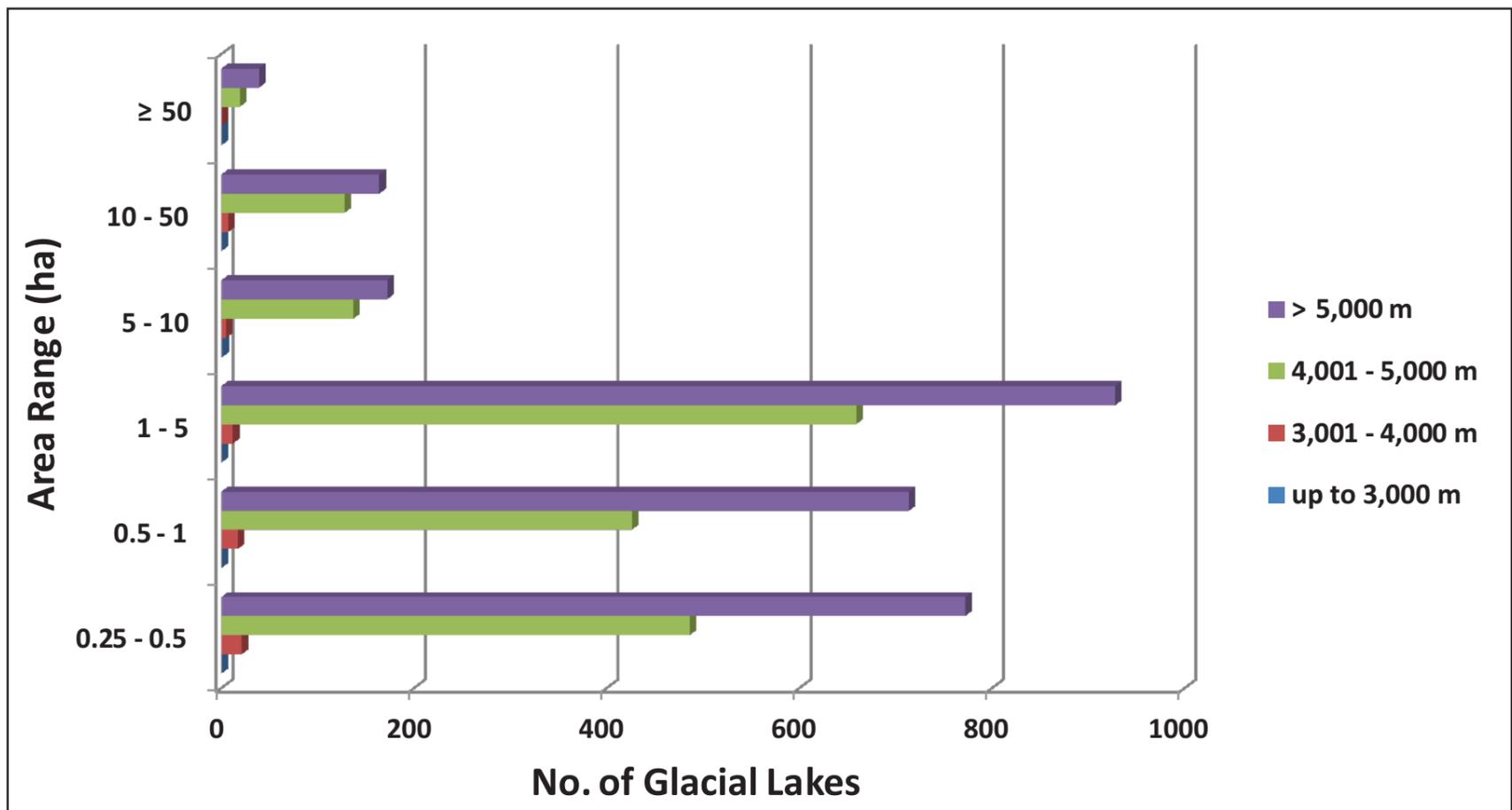
Figure 11: Area range-wise vs. Elevation range-wise distribution of GL in Ganga River basin

Type-Elevation range-wise Distribution

Glacial lake distribution has been analyzed as per type-wise vs. elevation range-wise, given in Table 11 and Figure 12. The dominant lake type in the basin i.e. Other Glacial Erosion lake (37.05%) is predominantly located in the elevation range of 4,001 - 5,000 m (52.18%). The two other dominant lake types, namely, Other Moraine Dammed and Supra-glacial lake are mostly distributed in both > 5,000 m and 4,001 - 5,000 m elevation ranges. 75.82% of Moraine-dammed glacial lakes, which constitute 44.81% of the total lakes, lies in the very high altitude range of > 5,000 m amsl. Elevation range-type-wise spatial distribution of glacial lakes has been represented in Figure 13.

Table 11: Type-wise vs. Elevation range-wise distribution of GL in Ganga River basin

S. No.	Elevation Range (m)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	up to 3,000	0	0	0	0	0	0	0	1	0	1
2	3,001 - 4,000	3	1	0	8	14	0	1	23	12	62
3	4,001 - 5,000	77	54	1	366	286	0	93	910	68	1,855
4	> 5,000	180	45	8	1,366	317	1	29	810	33	2,789
	Total	260	100	9	1,740	617	1	123	1,744	113	4,707
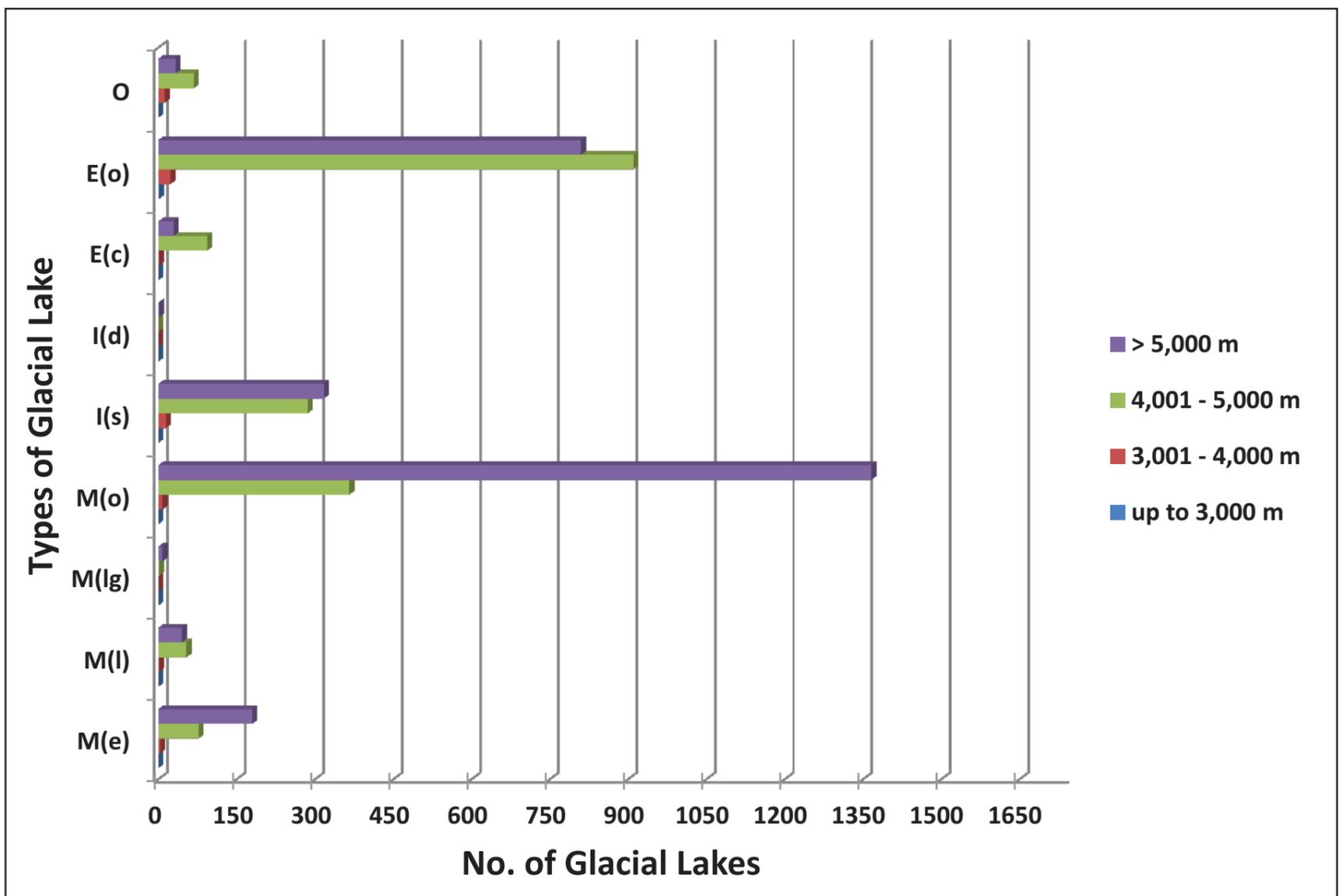
Figure 12: Type-wise vs. Elevation range-wise distribution of GL in Ganga River basin
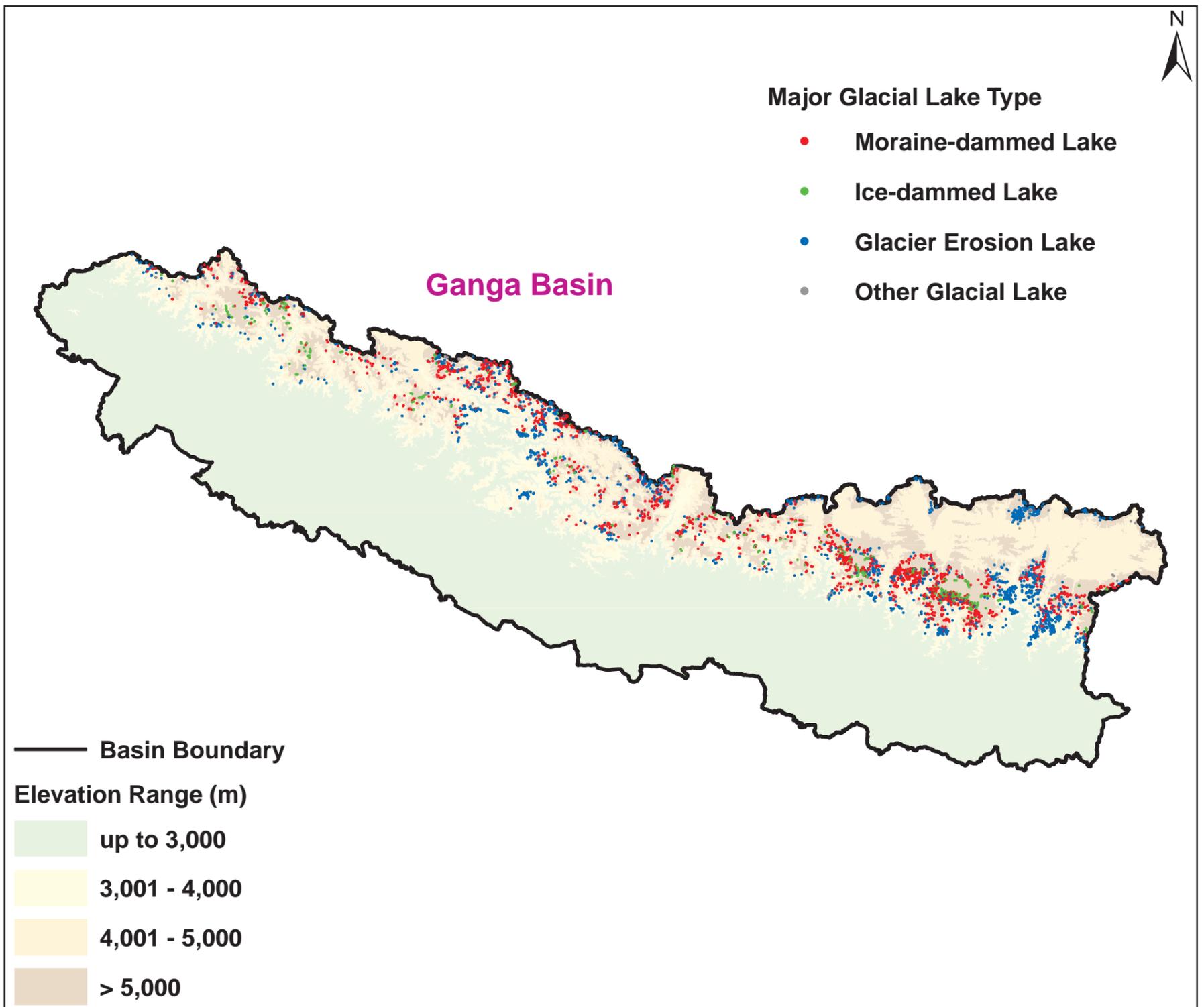
Figure 13: Elevation range-Type-wise spatial distribution of GL in Ganga River basin

5.2 Subbasin-Wise Statistics

In Ganga River basin, 6 out of 11 subbasins only contain glacial lakes viz., Gandak, Ghaghara, Kosi, Sarda, Upper Ganga, and Yamuna. Whereas, remaining 5 subbasins viz., Bhagmati, Kamla, Lower Ganga, Ramganga, and Rapti does not contain any glacial lake. The results of each subbasin which contain glacial lakes are discussed in subsequent sections.

5.2.1 Gandak Subbasin

The Gandak subbasin of the Ganga River basin is the third largest subbasin amongst all, covering a total area of 36,465 Km² i.e. 14.76% of the total basin area (Figure 14). Kali Gandak and Trisuli are the two main tributaries of Gandak subbasin, and with the confluence of both rivers at Devghat Dham (above Bharatpur city of Nepal), from where the Gandak River assumes its name. Before Trisuli confluence with Kali Gandak, few rivers also meets with it viz., Budhi Gandak, Marsyangdi, and Seti at Benighat, Darechok, and Kabilas (also known as Seti-Trisuli Dovan) respectively, all within Nepal. A total of 624 glacial lakes has been mapped, covering a total area of 1,912.84 ha i.e. 0.05% of the total area of the subbasin.
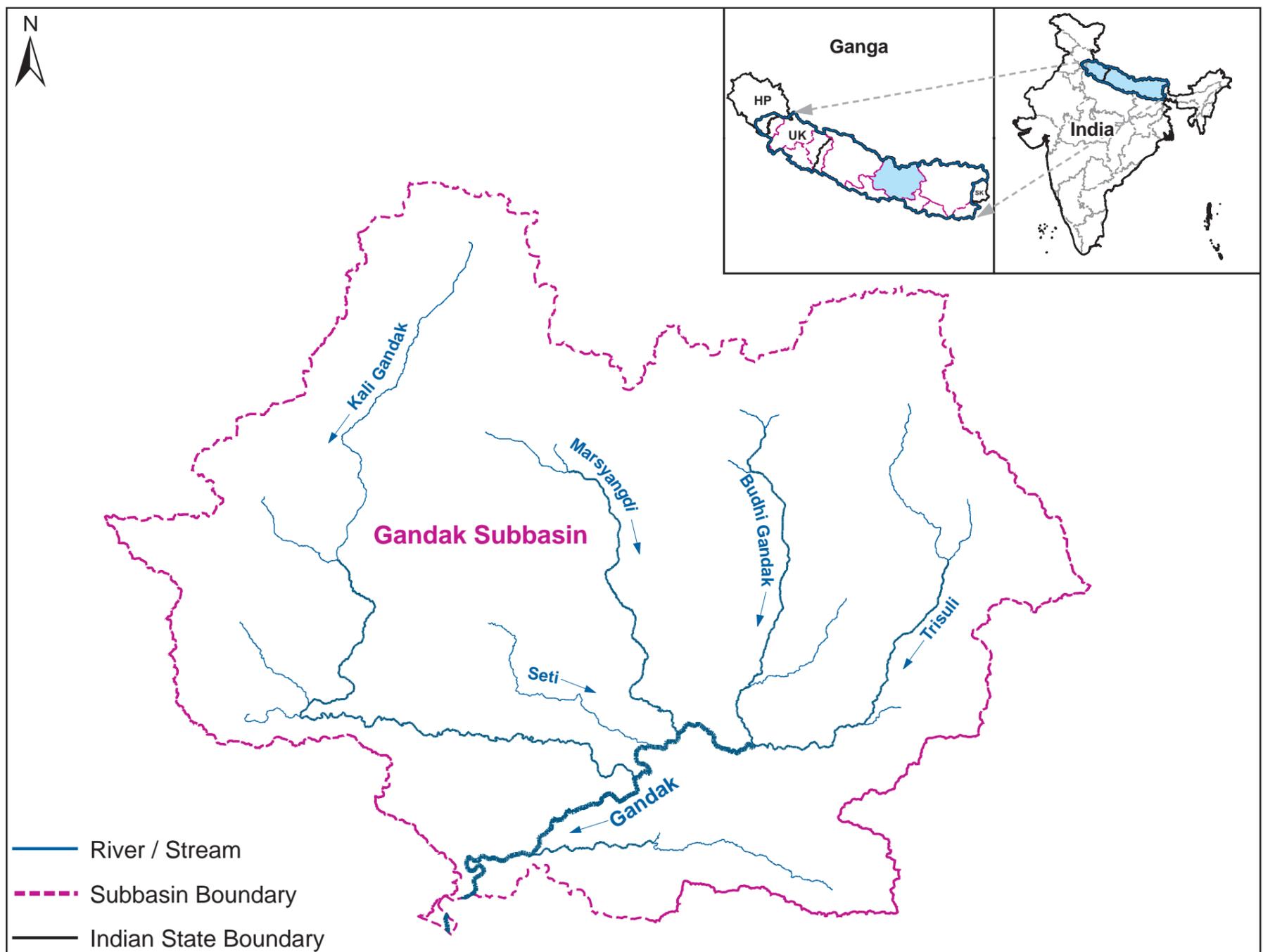
Figure 14: Location map of the Gandak subbasin

Area range-wise Distribution

In Gandak subbasin, glacial lakes has been distributed in all 6 different classes of area ranges. Table 12 and Figure 15 shows the area range-wise distribution of glacial lakes for the Gandak subbasin. About 551 (88.30%) lakes are with < 5 ha lake area contributing to 31.97% of total lake area. The remaining lakes with ≥ 5 ha in size are only 73 (11.70%) but contributing to 68.03% of total lake area in the subbasin.

Table 12: Area range-wise distribution of GL in Gandak subbasin

S. No.	Lake Area Range (ha)	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	0.25 - 0.5	189	66.76	3.50
2	0.5 - 1	157	109.48	5.72
3	1 - 5	205	435.25	22.75
4	5 - 10	36	242.86	12.70
5	10 - 50	35	628.84	32.87
6	≥ 50	2	429.65	22.46
	Total	**624**	**1,912.84**	**100.00**
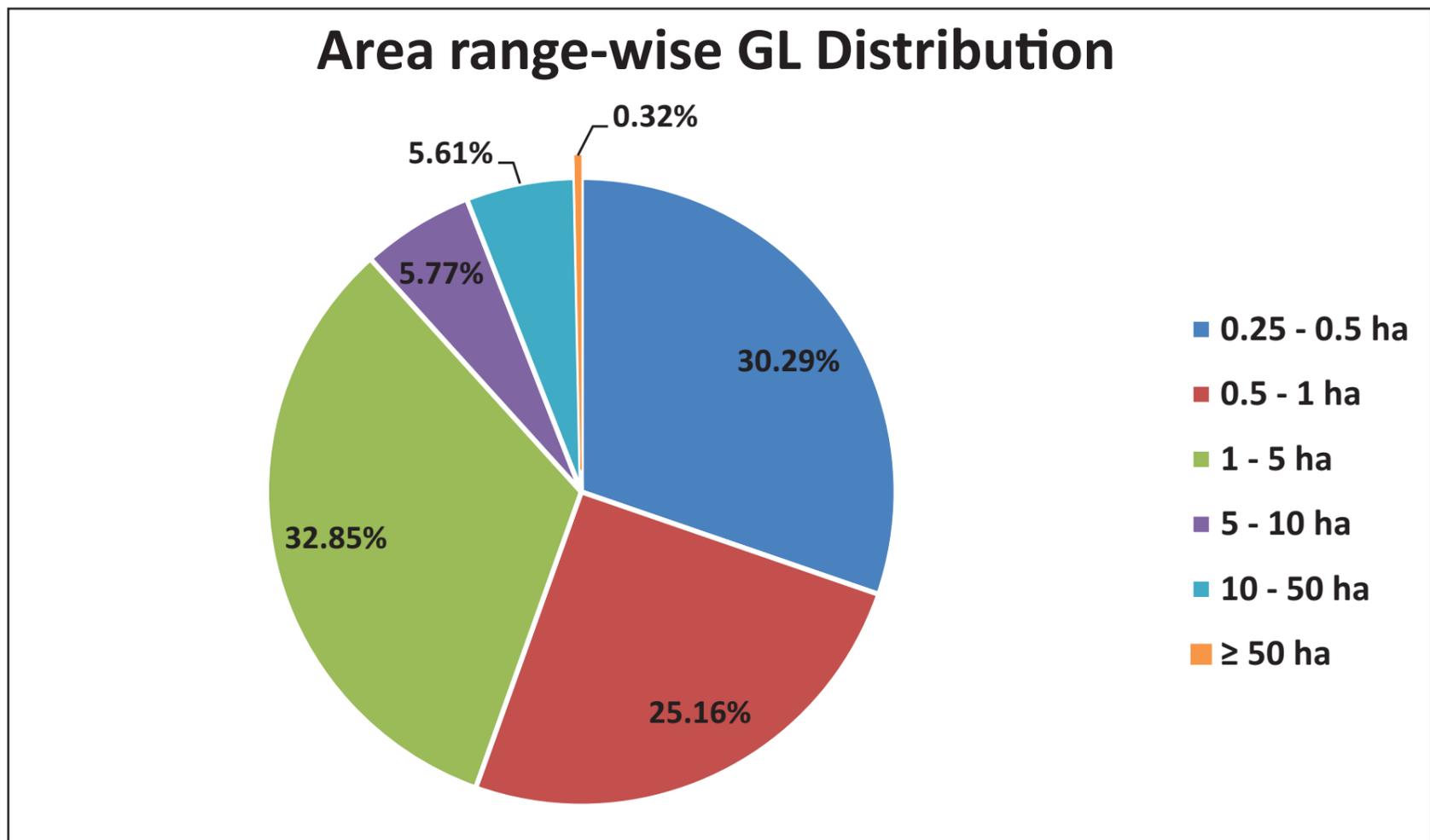
Figure 15: Area range-wise distribution of GL in Gandak subbasin

Type-wise Distribution

Distribution of different types of glacial lake in the Gandak subbasin is given in Table 13 and Figure 16. All 9 types of glacial lake are present in the Gandak subbasin, where Other Moraine Dammed lake is found to be the maximum with 312 (50.00%) occupying a total lake extent of 897.92 ha at 46.94% in the subbasin. Other Glacial Erosion lakes are second majority of lakes i.e. 125 (20.03%) and extend over an area of 259.63 ha (13.57%).

Table 13: Type-wise distribution of GL in Gandak subbasin

S. No.	Code	Types of Glacial Lake	No. of Lakes	Total Lake Area (ha)	Total Lake Area (%)
1	M(e)	End-moraine Dammed Lake	37	491.14	25.68
2	M(l)	Lateral Moraine Dammed Lake	18	54.64	2.85
3	M(lg)	Lateral Moraine Dammed Lake with Ice	6	3.00	0.16
4	M(o)	Other Moraine Dammed Lake	312	897.92	46.94
5	I(s)	Supra-glacial Lake	101	80.91	4.23
6	I(d)	Glacier Ice-dammed Lake	1	2.45	0.13
7	E(c)	Cirque Erosion Lake	4	31.79	1.66
8	E(o)	Other Glacial Erosion Lake	125	259.63	13.57
9	O	Other Glacial Lake	20	91.36	4.78
		Total	**624**	**1,912.84**	**100.00**
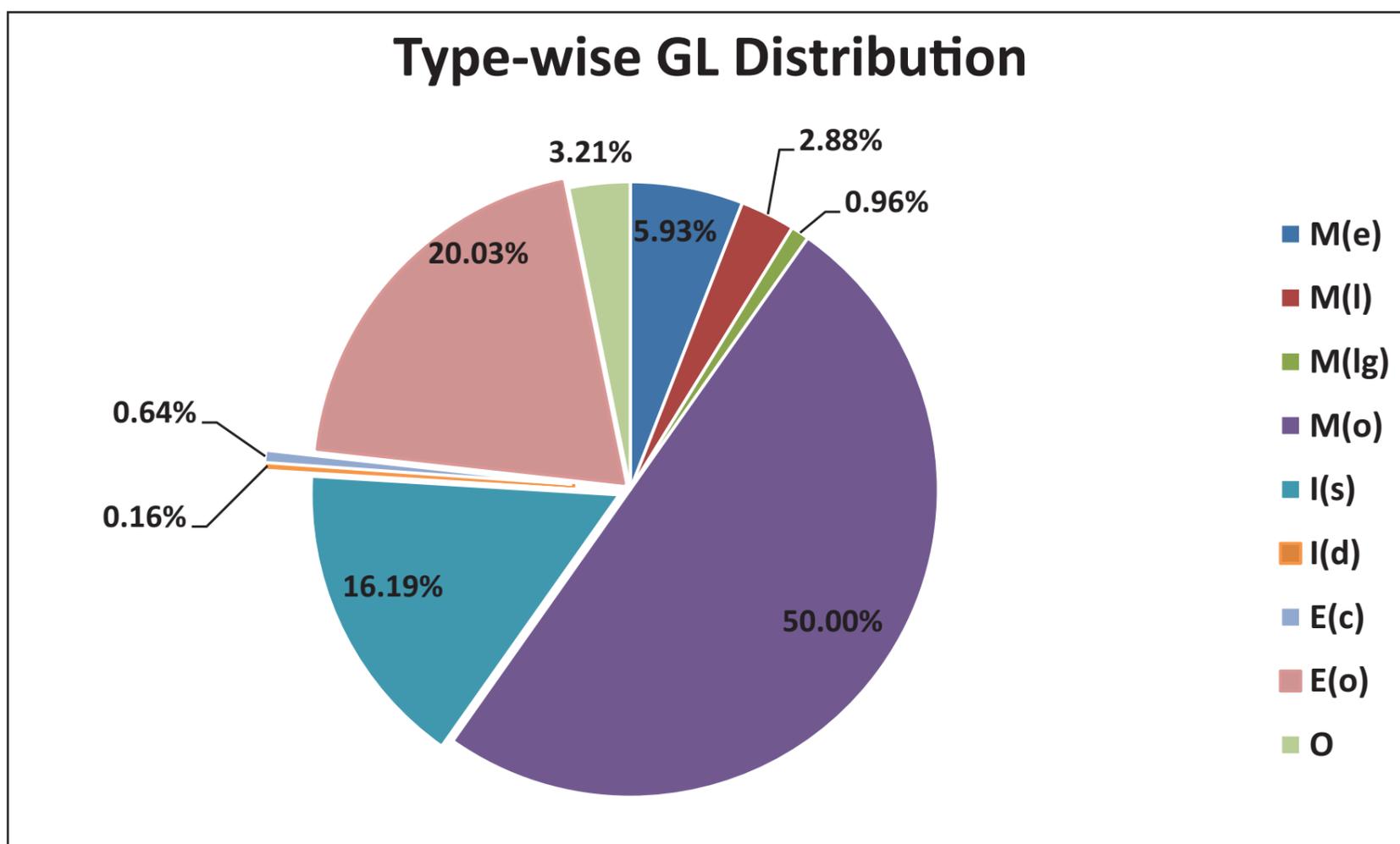
Figure 16: Type-wise distribution of GL in Gandak subbasin

Area range-Type-wise Distribution

Glacial lake distribution by area range vs. type-wise is given in Table 14 and Figure 17. The lakes with < 5 ha in size (88.30%) are dominated by Other Moraine Dammed (51.91%) followed by Other Glacial Erosion type (20.33%). Lakes with ≥ 5 ha (11.70%) are dominated by Other Moraine Dammed (35.62%) followed by End-moraine Dammed type (30.14%). All types of Moraine-dammed lakes, which constitute about 59.78% are predominantly with < 5 ha in water spread.

Table 14: Area range-wise vs. Type-wise distribution of GL in Gandak subbasin

S. No.	Lake Area Range (ha)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	0.25 - 0.5	1	4	4	85	59	0	0	35	1	189
2	0.5 - 1	0	6	2	89	25	0	0	28	7	157
3	1 - 5	14	6	0	112	15	1	2	49	6	205
4	5 - 10	6	0	0	17	1	0	1	9	2	36
5	10 - 50	15	2	0	8	1	0	1	4	4	35
6	≥ 50	1	0	0	1	0	0	0	0	0	2
	Total	**37**	**18**	**6**	**312**	**101**	**1**	**4**	**125**	**20**	**624**
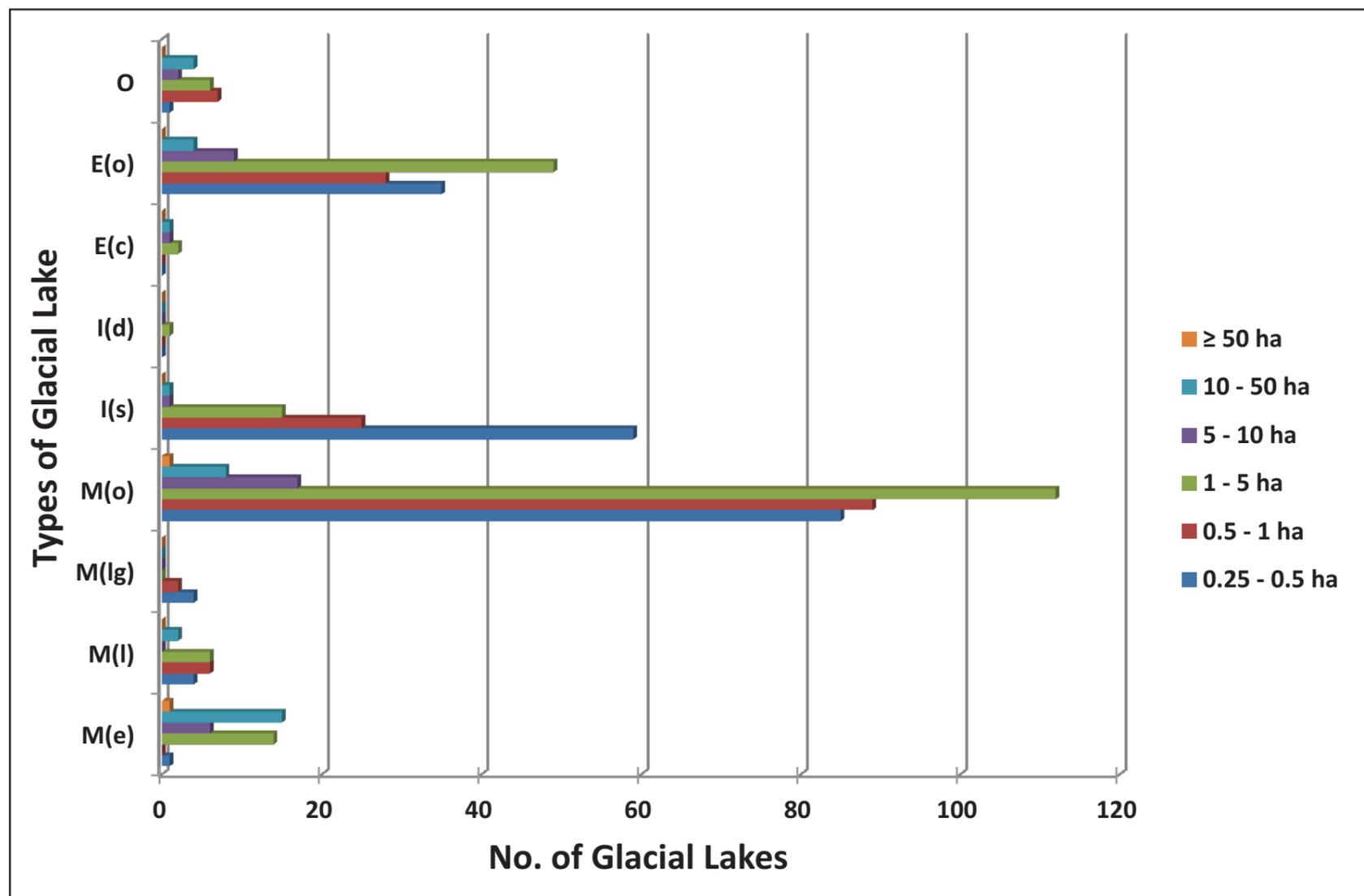
Figure 17: Area range-wise vs. Type-wise distribution of GL in Gandak subbasin

Elevation range-wise Distribution

Elevation range-wise distribution of the glacial lakes in the Gandak subbasin has been shown in Table 15 and Figure 18. Majority of glacial lakes are situated above 4,000 m elevation i.e. 601 (96.31%) with total lake area of 1,834.70 ha (95.91%) and remaining 3.69% glacial lakes are below 4,001 m elevation.

Table 15: Elevation range-wise distribution of GL in Gandak subbasin

S. No.	Elevation Range (m)	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	up to 3,000	1	9.87	0.52
2	3,001 - 4,000	22	68.27	3.57
3	4,001 - 5,000	220	1,060.56	55.44
4	> 5,000	381	774.14	40.47
	Total	**624**	**1,912.84**	**100.00**
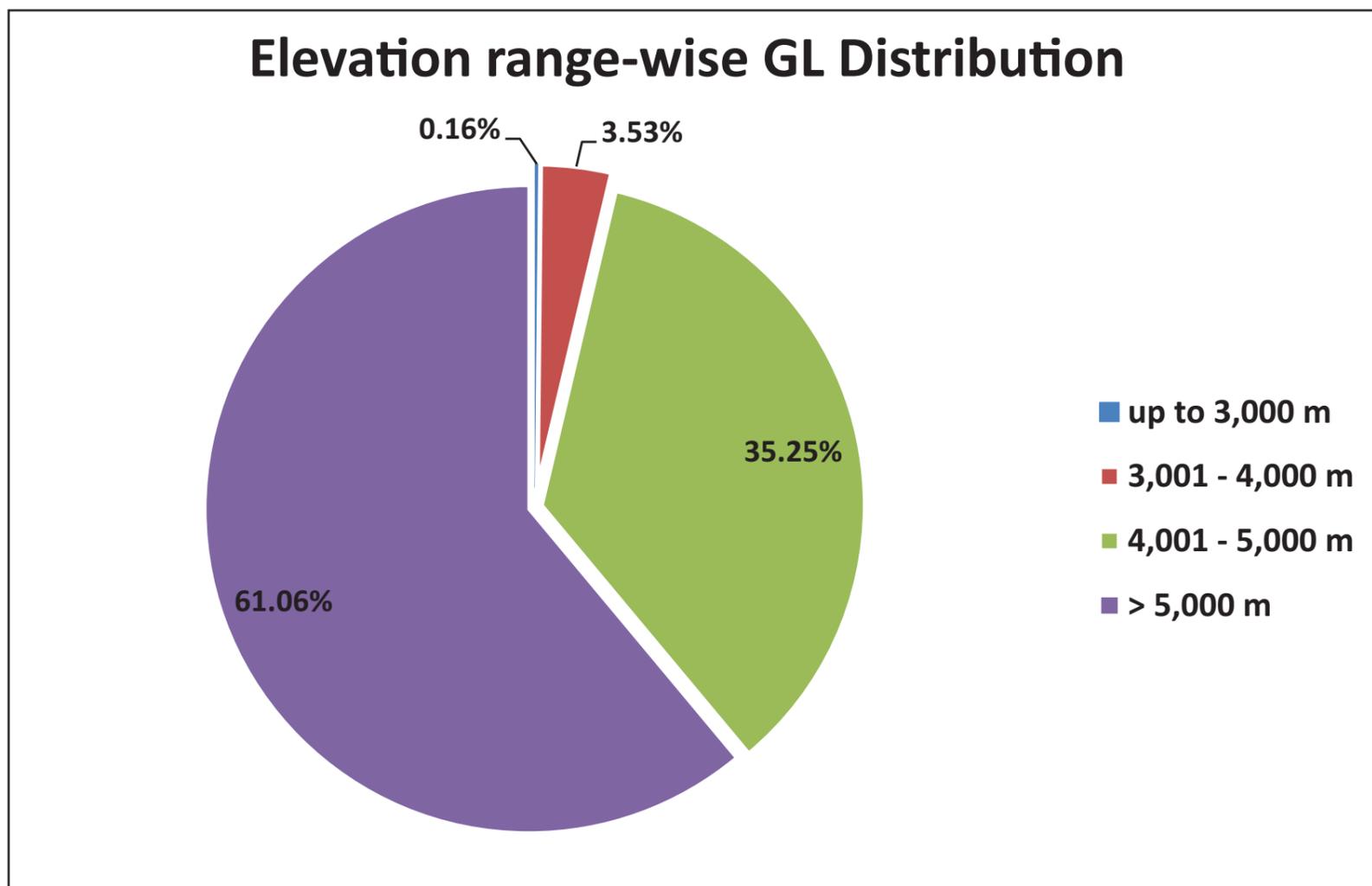
Figure 18: Elevation range-wise distribution of GL in Gandak subbasin

Area-Elevation range-wise Distribution

Glacial lake distribution has been analyzed as per area range vs. elevation range-wise, given in Table 16 and Figure 19. It is noted that, 61.06% of glacial lakes (381) are situated in very high altitude range i.e. > 5,000 m amsl, which constitutes 40.47% of total lake area. However, few glacial lakes (23) lies below 4,001 m, which are within 0.25 - 50 ha lake area range. Maximum of lakes lying in very high altitude range is of size ranging 1 - 5 ha (i.e. 136), followed by lakes of size 0.25 - 0.5 ha (i.e. 116).

Table 16: Area range-wise vs. Elevation range-wise distribution of GL in Gandak subbasin

| S. No. | Lake Area Range (ha) | Elevation Range (m) | | | | | | | | Total | |
| | | up to 3,000 | | 3,001 - 4,000 | | 4,001 - 5,000 | | > 5,000 | | | |
		No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Lake Area (ha)
1	0.25 - 0.5	0	0.00	10	3.29	63	22.01	116	41.46	189	66.76
2	0.5 - 1	0	0.00	7	5.22	56	38.09	94	66.17	157	109.48
3	1 - 5	0	0.00	1	4.48	68	143.47	136	287.30	205	435.25
4	5 - 10	1	9.87	2	11.77	11	76.99	22	144.23	36	242.86
5	10 - 50	0	0.00	2	43.51	20	350.34	13	234.99	35	628.84
6	≥ 50	0	0.00	0	0.00	2	429.65	0	0.00	2	429.65
	Total	**1**	**9.87**	**22**	**68.27**	**220**	**1,060.55**	**381**	**774.15**	**624**	**1,912.84**
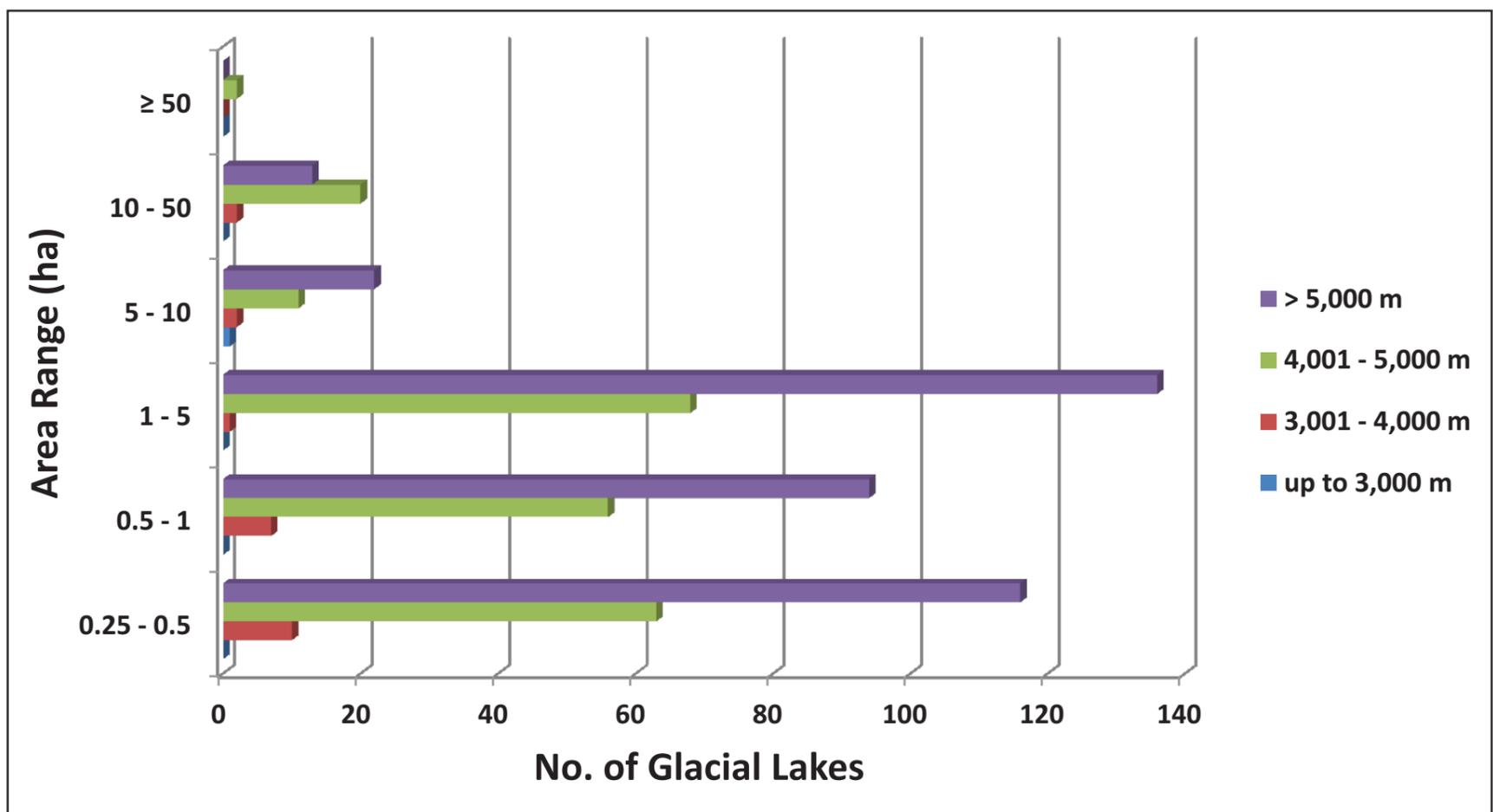
Figure 19: Area range-wise vs. Elevation range-wise distribution of GL in Gandak subbasin

Type-Elevation range-wise Distribution

Glacial lake distribution has also been analyzed as per type-wise vs. elevation range-wise, given in Table 17 and Figure 20. The dominant lake type in the basin i.e. Other Moraine Dammed lake (50.00%) is predominantly located in the elevation range of > 5,000 m (77.88%). The other dominant lake type, namely, Other Glacial Erosion lake is also distributed in > 5,000 m elevation range which constitutes 56.80% of the total lakes. Elevation range-type-wise spatial distribution of glacial lakes has been represented in Figure 21.

Table 17: Type-wise vs. Elevation range-wise distribution of GL in Gandak subbasin

S. No.	Elevation Range (m)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	up to 3,000	0	0	0	0	0	0	0	1	0	1
2	3,001 - 4,000	2	1	0	4	10	0	0	5	0	22
3	4,001 - 5,000	19	12	0	65	53	0	4	48	19	220
4	> 5,000	16	5	6	243	38	1	0	71	1	381
	Total	37	18	6	312	101	1	4	125	20	624
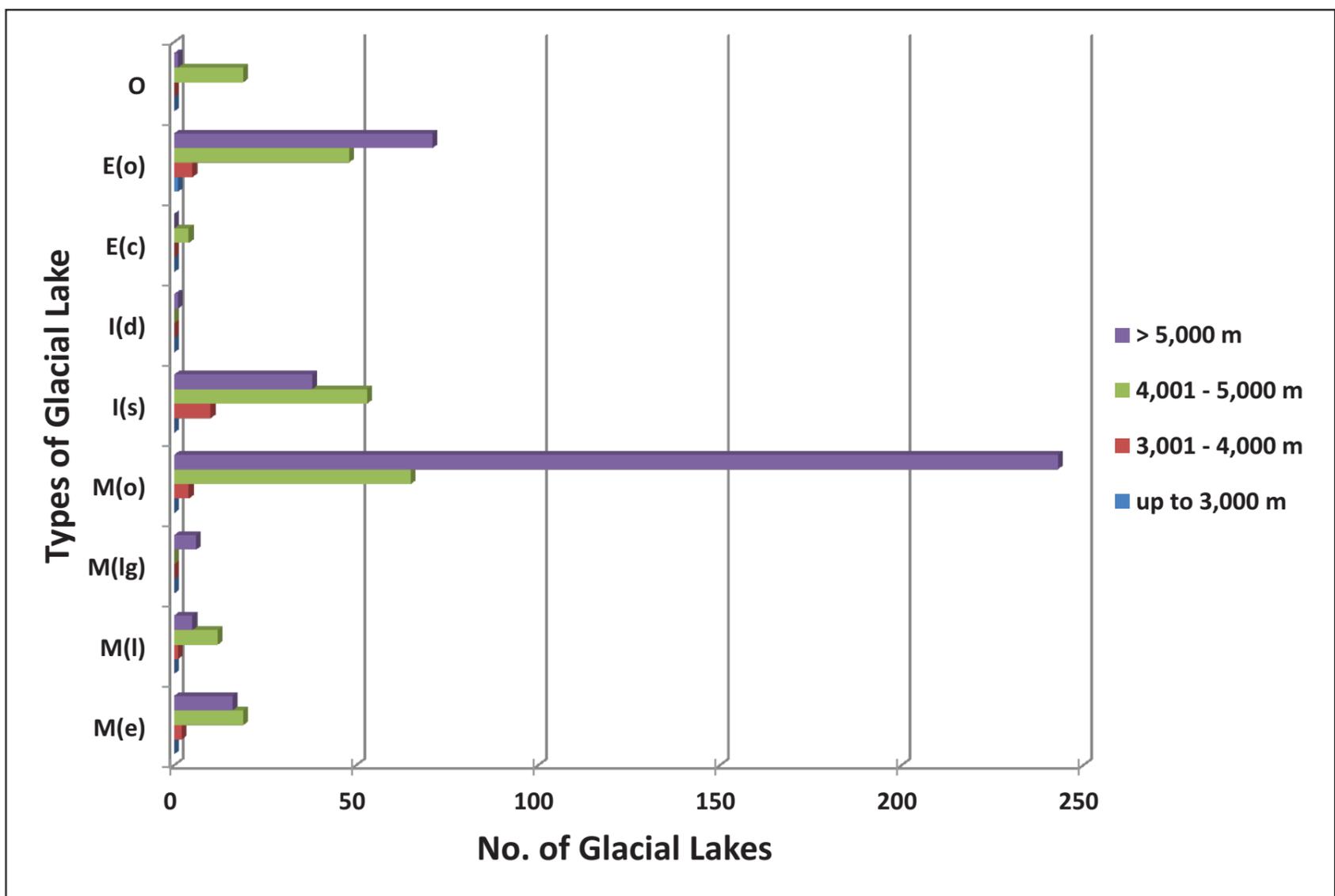
Figure 20: Type-wise vs. Elevation range-wise distribution of GL in Gandak subbasin
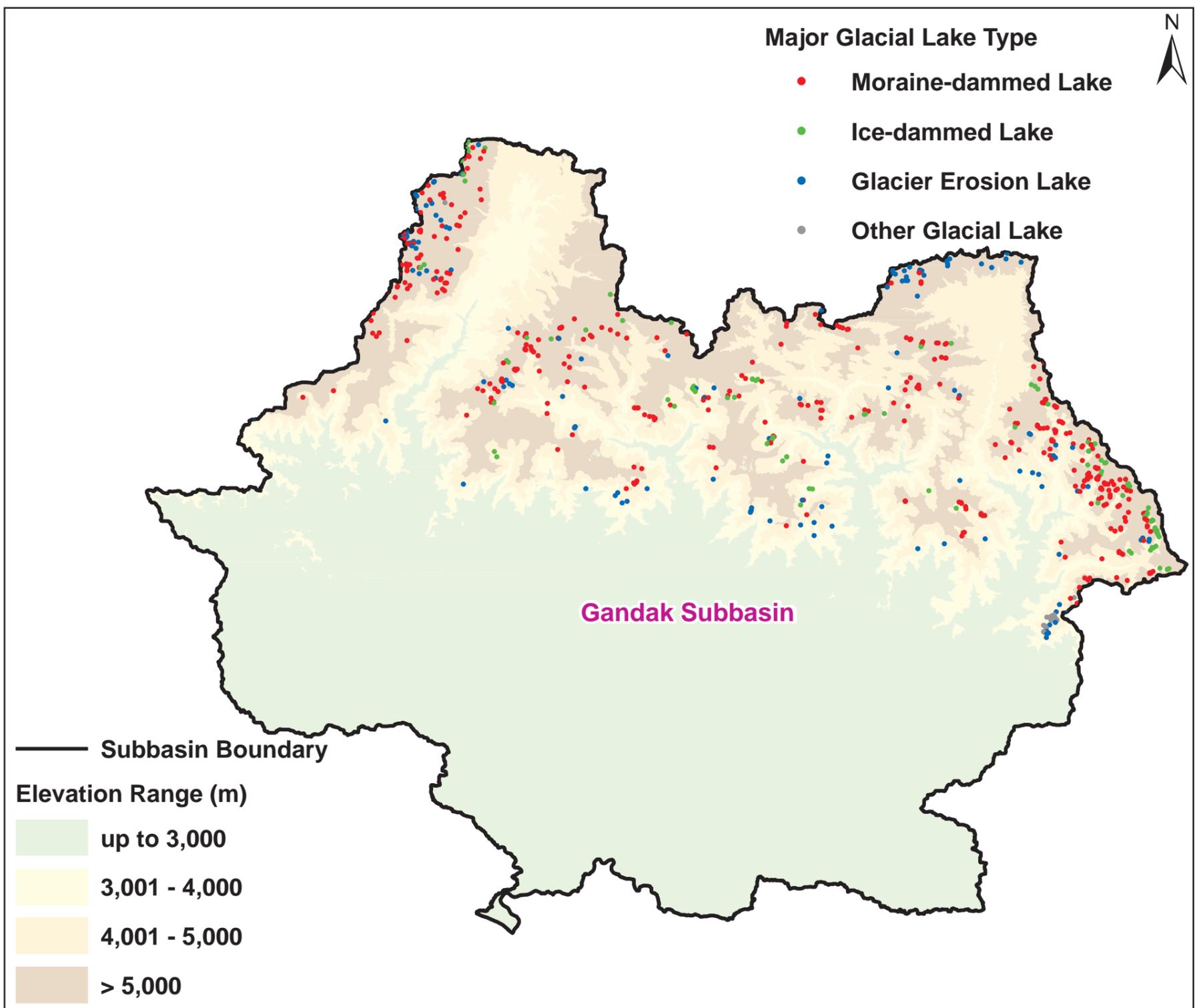
Figure 21: Elevation range-Type-wise spatial distribution of GL in Gandak subbasin

5.2.2 Ghaghra Subbasin

The Ghaghara subbasin is the second largest subbasin of the Ganga basin covering a total area of 53,072 Km^2 i.e. 21.48% of the total basin area (Figure 22). Karnal and Bheri are the two major tributaries of the subbasin and after their confluence the river assumes the name 'Ghaghara'. Karnal River is the largest river draining into the river Ghaghara, which has many various tributaries viz., Humla, Mugu, Tila, and West Seti. The West Seti River rises near Api mountain peak and flows in south-easterly direction to join the Karnal. The Bheri River rises in the higher reaches of Dhaulagiri massif and drain into the mainstream in the lower hills of Nepal. A total of 1,260 glacial lakes has been mapped, covering a total area of 3,536.39 ha i.e. 0.06% of the total area of the subbasin.

Figure 22: Location map of the Ghaghara subbasin

Area range-wise Distribution

In Ghaghara subbasin, glacial lakes have been distributed in all 6 classes of area ranges. Table 18 and Figure 23 shows the area range-wise distribution of glacial lakes for the Ghaghara subbasin. About 1,090 (86.51%) lakes are with < 5 ha lake area contributing to 36.66% of total lake area. The remaining lakes with ≥ 5 ha in size are only 170 (13.49%) contributing to 63.34% of total lake area in the subbasin.

Table 18: Area range-wise distribution of GL in Ghaghara subbasin

S. No.	Lake Area Range (ha)	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	0.25 - 0.5	334	118.99	3.36
2	0.5 - 1	321	232.49	6.57
3	1 - 5	435	945.22	26.73
4	5 - 10	84	594.54	16.81
5	10 - 50	84	1,507.18	42.63
6	≥ 50	2	137.97	3.90
	Total	**1,260**	**3,536.39**	**100.00**
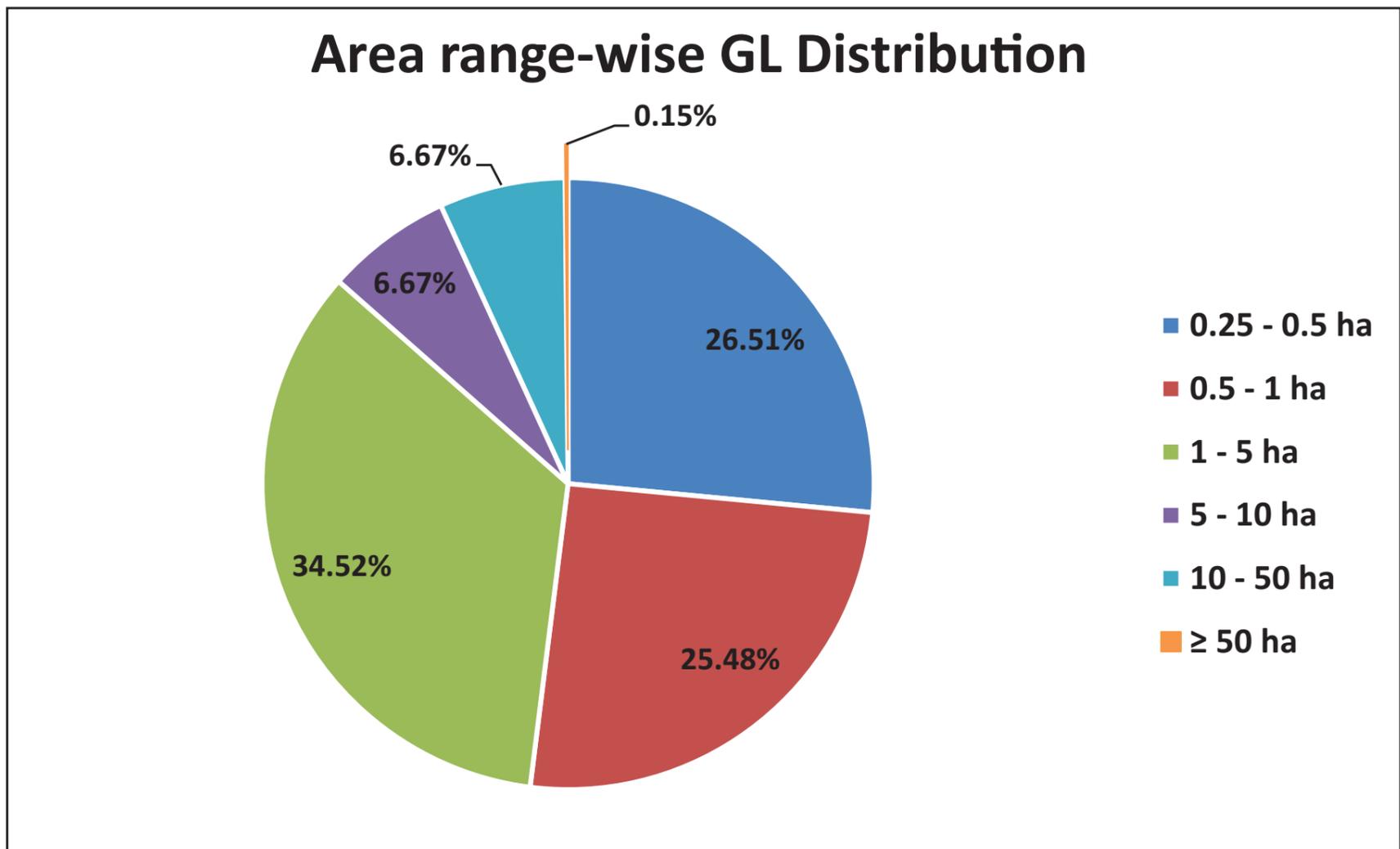
Figure 23: Area range-wise distribution of GL in Ghaghara subbasin

Type-wise Distribution

Distribution of different types of glacial lake in the Ghaghara subbasin is given in Table 19 and Figure 24. Out of 9 types of glacial lake, 8 types of lake are present in the Ghaghara subbasin, where Other Glacial Erosion lakes are found to be the maximum with 549 (43.57%) occupying a total lake extent of 1,284.57 ha at 36.32% in the subbasin. After that, Other Moraine Dammed lakes are in majority with 485 (38.49%) and extend over a total area of 880.87 ha (24.91%). All Moraine-dammed lakes constitute about 45.71% of all lakes in the subbasin.

Table 19: Type-wise distribution of GL in Ghaghara subbasin

S.No.	Code	Types of Glacial Lake	No. of Lakes	Total Lake Area (ha)	Total Lake Area (%)
1	M(e)	End-moraine Dammed Lake	61	710.41	20.10
2	M(l)	Lateral Moraine Dammed Lake	27	158.60	4.48
3	M(lg)	Lateral Moraine Dammed Lake with Ice	3	2.48	0.07
4	M(o)	Other Moraine Dammed Lake	485	880.87	24.91
5	I(s)	Supra-glacial Lake	73	45.27	1.28
6	I(d)	Glacier Ice-dammed Lake	0	0.00	0.00
7	E(c)	Cirque Erosion Lake	27	311.33	8.80
8	E(o)	Other Glacial Erosion Lake	549	1,284.57	36.32
9	O	Other Glacial Lake	35	142.86	4.04
		Total	**1,260**	**3,536.39**	**100.00**
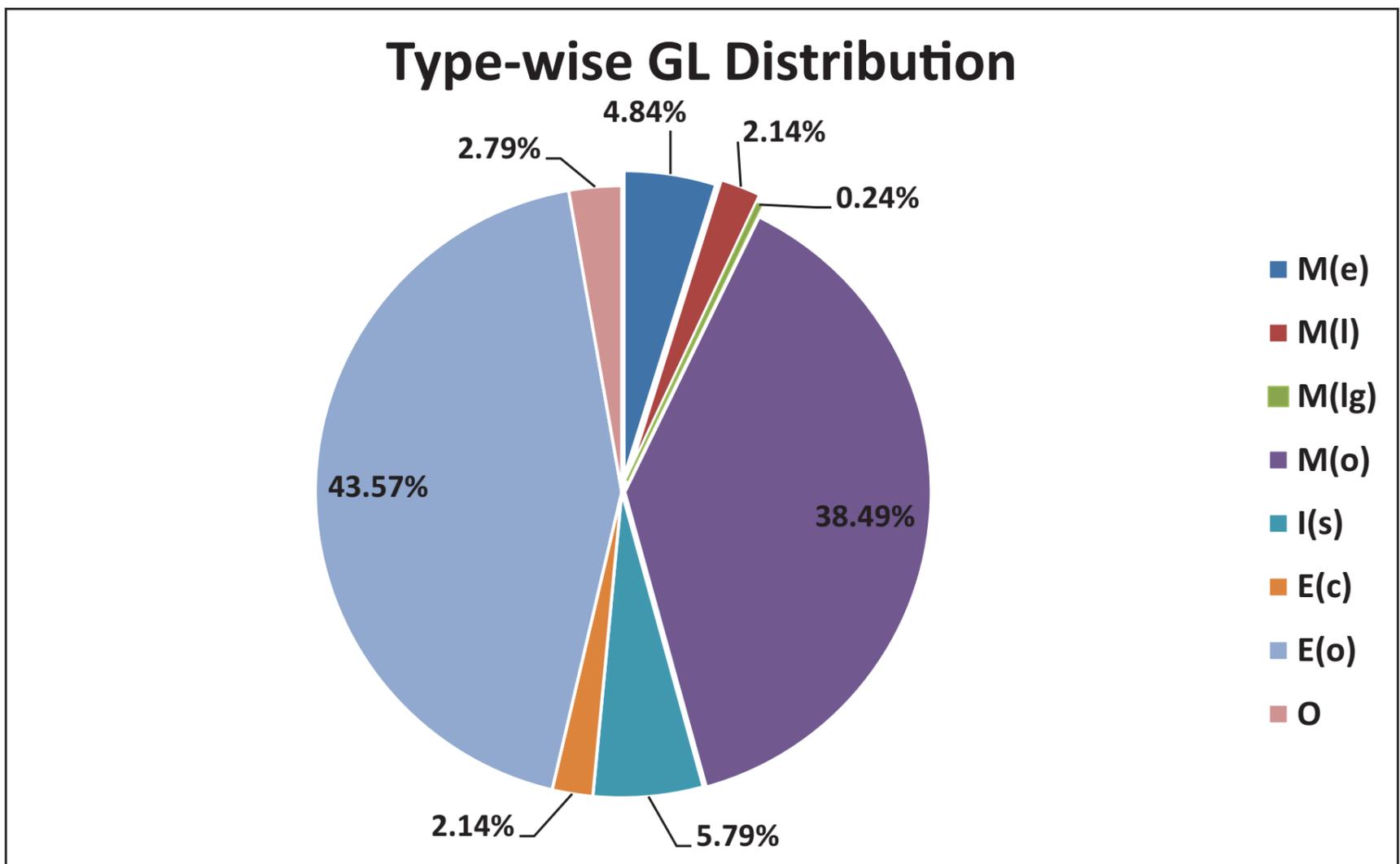
Figure 24: Type-wise distribution of GL in Ghaghara subbasin

Area range-Type-wise Distribution

Glacial lake distribution by area range vs. type-wise is given in Table 20 and Figure 25. The lakes with < 5 ha in size (86.51%) are dominant with Other Glacial Erosion (44.59%) and Other Moraine Dammed lakes (41.19%). Lakes with ≥ 5 ha (13.49%) are also dominated by Other Glacial Erosion type (37.06%). All types of Glacier Erosion lake, which constitute about 45.71% are predominantly with < 5 ha in water spread.

Table 20: Area range-wise vs. Type-wise distribution of GL in Ghaghara subbasin

S. No.	Lake Area Range (ha)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	0.25 - 0.5	2	7	0	133	43	0	1	139	9	334
2	0.5 - 1	6	6	2	152	21	0	0	124	10	321
3	1 - 5	14	7	1	164	9	0	8	223	9	435
4	5 - 10	13	3	0	21	0	0	8	38	1	84
5	10 - 50	25	3	0	15	0	0	10	25	6	84
6	≥ 50	1	1	0	0	0	0	0	0	0	2
	Total	**61**	**27**	**3**	**485**	**73**	**0**	**27**	**549**	**35**	**1,260**
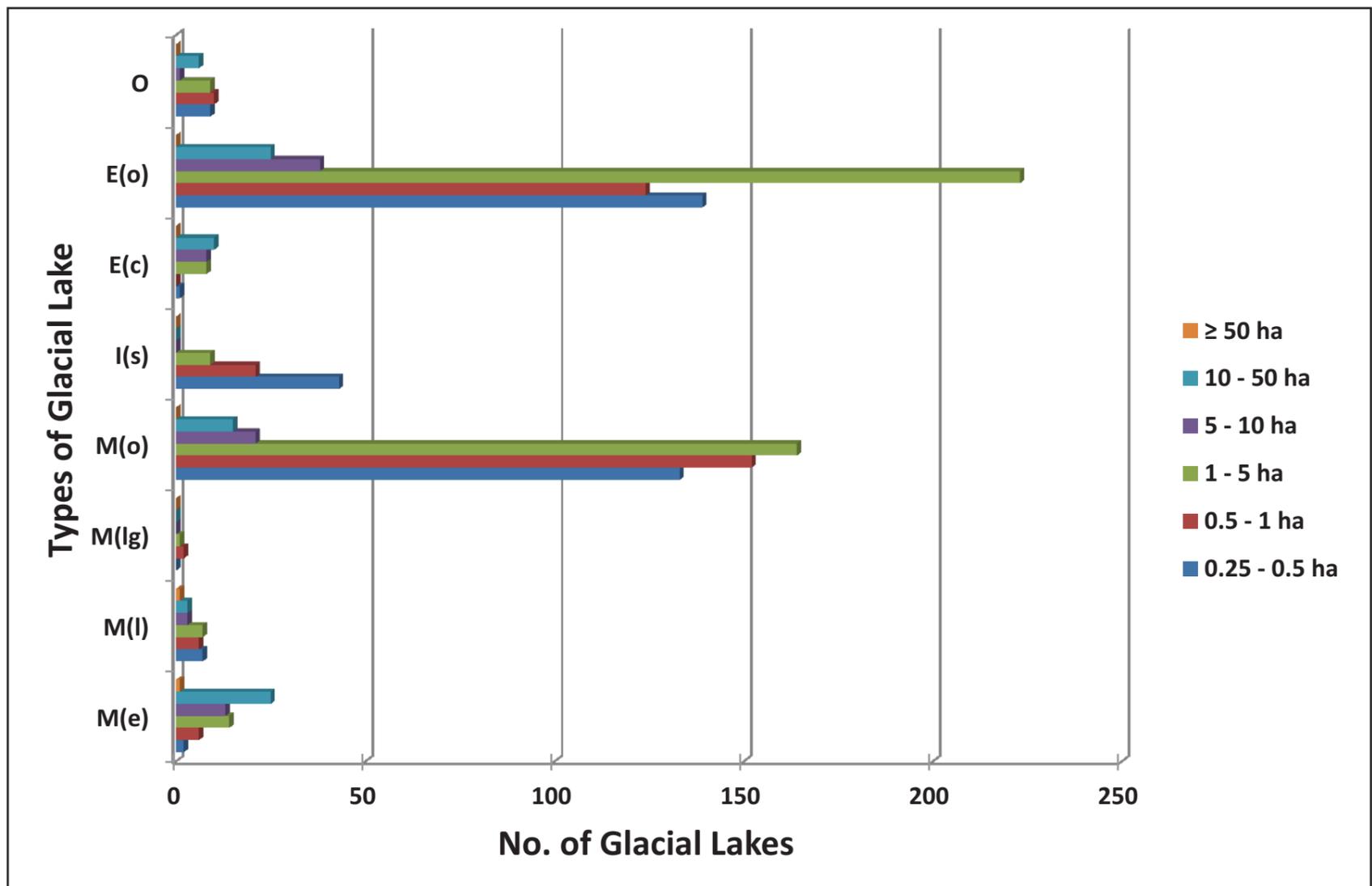
Figure 25: Area range-wise vs. Type-wise distribution of GL in Ghaghara subbasin

Elevation range-wise Distribution

Elevation range-wise distribution of the glacial lakes in the Ghaghara subbasin has been shown in Table 21 and Figure 26. Majority of glacial lakes are situated above 4,000 m elevation range i.e. 1,252 (99.36%) with total lake area of 3,477.48 ha (98.33%) and remaining 0.64% glacial lakes are below 4,001 m elevation.

Table 21: Elevation range-wise distribution of GL in Ghaghara subbasin

S. No.	Elevation Range (m)	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	up to 3,000	0	0.00	0.00
2	3,001 - 4,000	8	58.91	1.67
3	4,001 - 5,000	563	1,842.89	52.11
4	> 5,000	689	1,634.59	46.22
	Total	**1,260**	**3,536.39**	**100.00**

Figure 26: Elevation range-wise distribution of GL in Ghaghara subbasin

Area-Elevation range-wise Distribution

Glacial lake distribution has been analyzed as per area range vs. elevation range-wise, given in Table 22 and Figure 27. It is noted that, 54.68% of glacial lakes (689) are situated in very high altitude range i.e. > 5,000 m amsl, which constitutes a total lake area of 46.22%. However, majority of glacial lakes (614) of size < 5 ha lies above 5,000 m. 83.66% of lakes lying in high altitude range are < 5 ha, predominantly of size ranging 1 - 5 ha (i.e. 207), followed by lakes of size 0.25 - 0.5 ha (i.e. 148). It has been further noticed that, 54.12% of lakes ≥ 5 ha are lying within high altitude range i.e. 4,001 - 5,000 m, majority of them falling in size range of 10 - 50 ha.

Table 22: Area range-wise vs. Elevation range-wise distribution of GL in Ghaghara subbasin

| S. No. | Lake Area Range (ha) | Elevation Range (m) | | | | | | | | Total | |
| | | up to 3,000 | | 3,001 - 4,000 | | 4,001 - 5,000 | | > 5,000 | | | |
		No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Lake Area (ha)
1	0.25 - 0.5	0	0.00	0	0.00	148	53.23	186	65.76	334	118.99
2	0.5 - 1	0	0.00	4	2.98	116	83.46	201	146.04	321	232.49
3	1 - 5	0	0.00	1	1.68	207	465.99	227	477.55	435	945.22
4	5 - 10	0	0.00	1	8.93	44	302.77	39	282.84	84	594.54
5	10 - 50	0	0.00	2	45.31	47	875.12	35	586.75	84	1,507.18
6	≥ 50	0	0.00	0	0.00	1	62.33	1	75.65	2	137.97
	Total	0	0.00	8	58.90	563	1,842.90	689	1,634.59	1,260	3,536.39
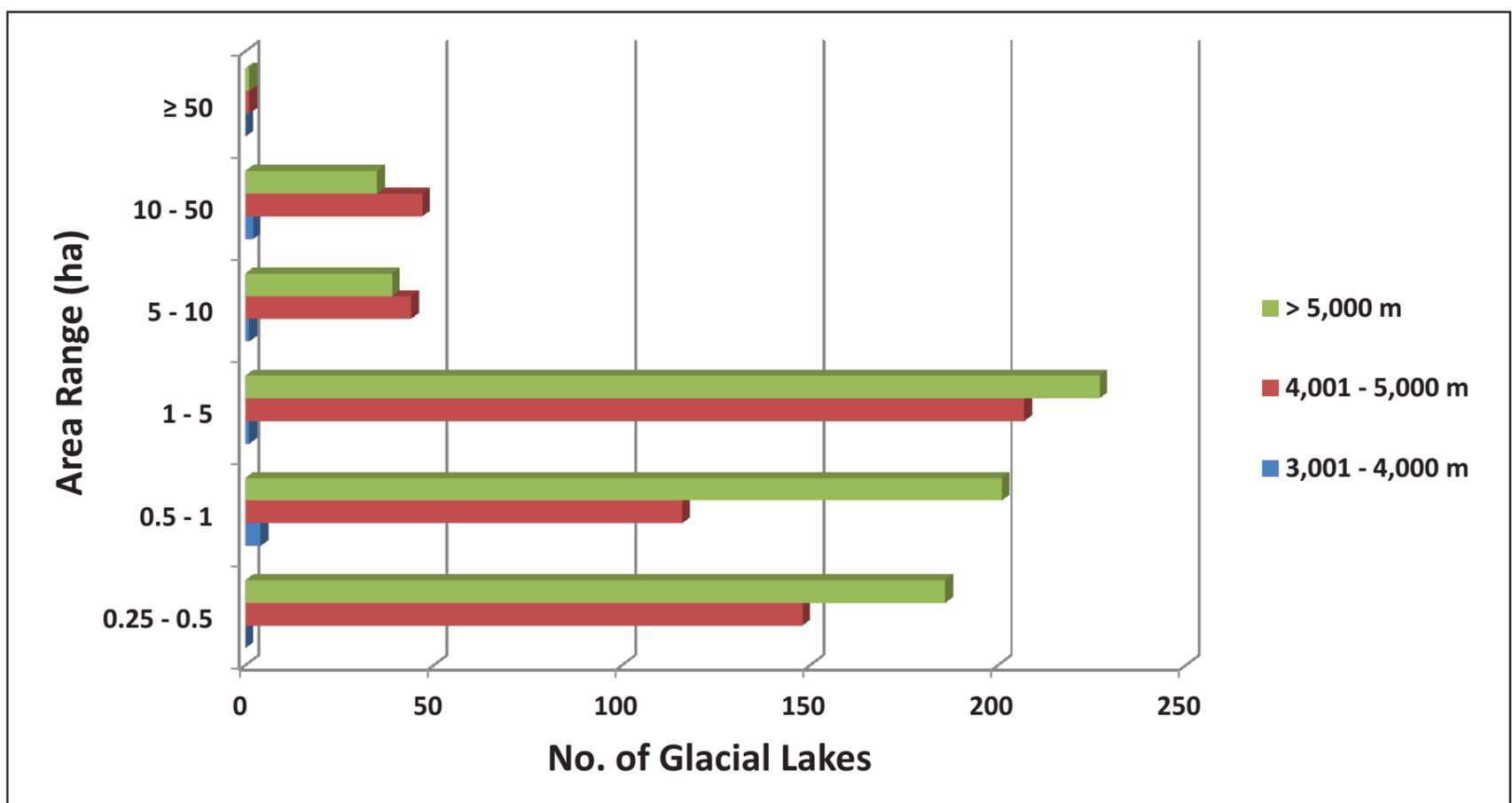
Figure 27: Area range-wise vs. Elevation range-wise distribution of GL in Ghaghara subbasin

Type-Elevation range-wise Distribution

Glacial lake distribution has also been analyzed as per type-wise vs. elevation range-wise, given in Table 23 and Figure 28. The dominant lake type in the subbasin i.e. Other Glacial Erosion lake (549) with 43.57% is predominantly located in the elevation range of 4,001 - 5,000 m (59.02%). The other dominant lake type i.e. Other Moraine Dammed lake is distributed predominantly in > 5,000 m and 4,001 - 5,000 m elevation ranges with 72.99% and 26.80% respectively. Majority of all types of Moraine-dammed and Glacier Erosion lake lies above 4,000 m elevation at almost equal numbers i.e. 574 and 573 respectively. Elevation range-type-wise spatial distribution of glacial lakes has been represented in Figure 29.

Table 23: Type-wise vs. Elevation range-wise distribution of GL in Ghaghara subbasin

| S. No. | Elevation Range (m) | Types of Glacial Lake | | | | | | | | | Total |
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	up to 3,000	0	0	0	0	0	0	0	0	0	0
2	3,001 - 4,000	1	0	0	1	0	0	0	3	3	8
3	4,001 - 5,000	17	10	1	130	40	0	18	324	23	563
4	> 5,000	43	17	2	354	33	0	9	222	9	689
	Total	**61**	**27**	**3**	**485**	**73**	**0**	**27**	**549**	**35**	**1,260**
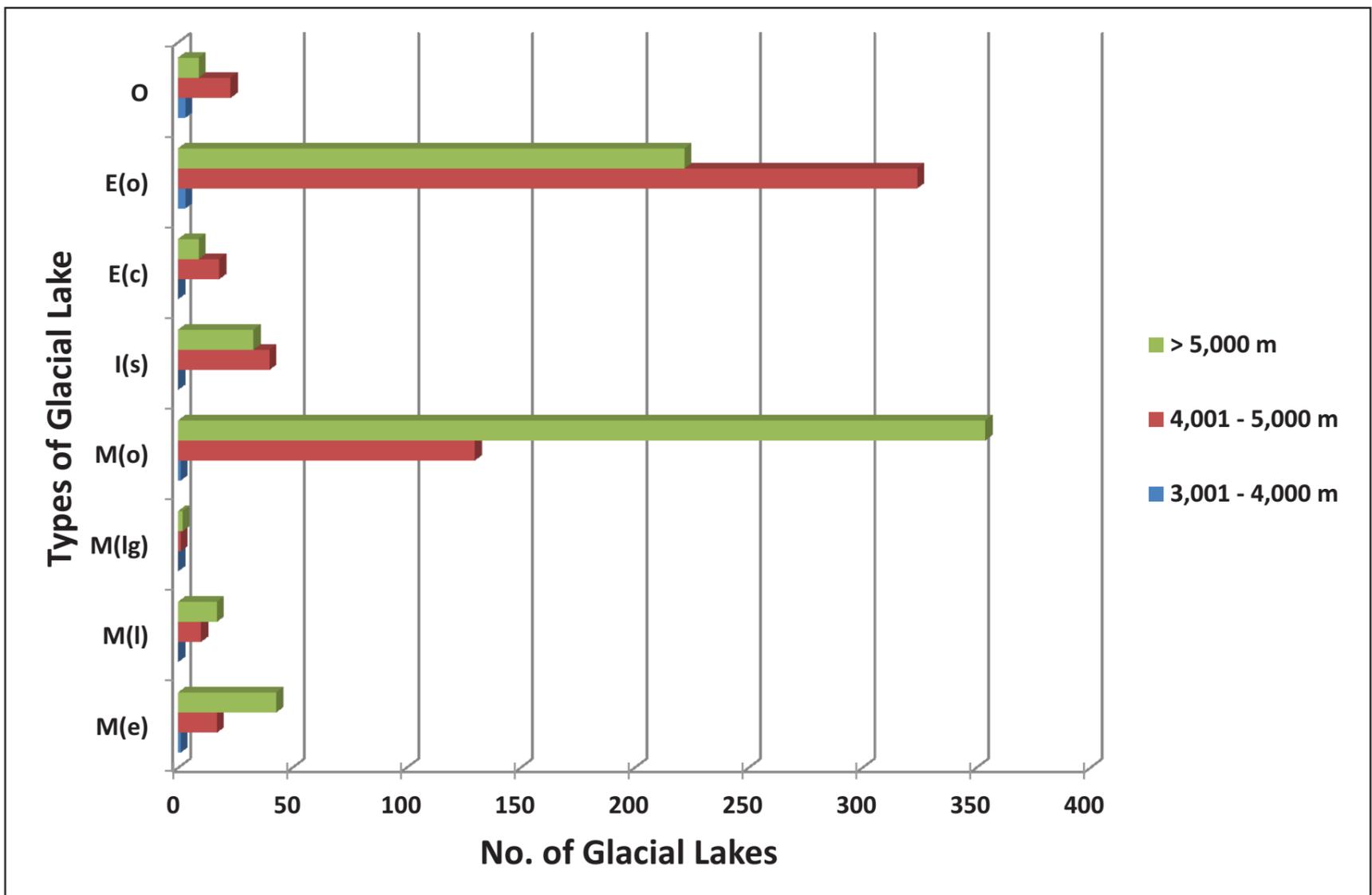
Figure 28: Type-wise vs. Elevation range-wise distribution of GL in Ghaghara subbasin
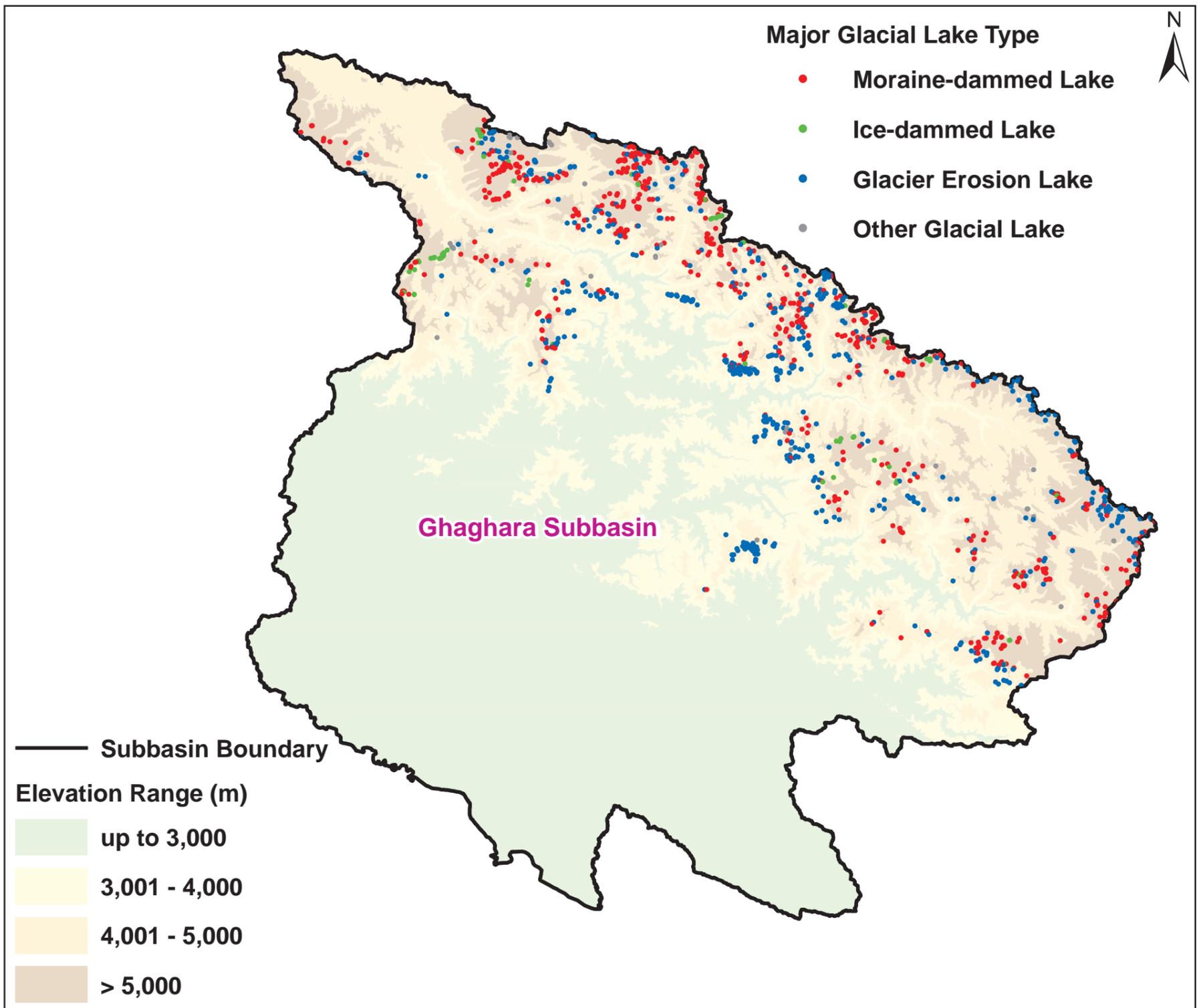
Figure 29: Elevation range-Type-wise spatial distribution of GL in Ghaghara subbasin

5.2.3 Kosi Subbasin

The Kosi subbasin is the largest subbasin of the Ganga River basin covering a total area of 59,709 Km² i.e. 24.16% of the total basin area (Figure 30). Kosi subbasin has so many high mountain peaks and Kosi River is joined by major tributaries like Sun Kosi, Tama Kosi, Dudh Kosi, Arun Kosi, and Tamur Kosi. The Arun Kosi River rises in the trans-Himalayan zone of Tibet, has cut a fantastic gorge across the main Himalayan range near the Everest massif. Yeru Chu and Bum Chu are the other two tributaries of Arun Kosi. The river Tamur Kosi which is the eastern tributary of the river Kosi, rises from the higher elevations of the western flank of the Kanchenjunga group of glaciers known as the Kumbhakaran Himal. A total of 2,437 glacial lakes has been mapped, covering a total area of 14,604.34 ha i.e. 0.24% of the total area of the subbasin.
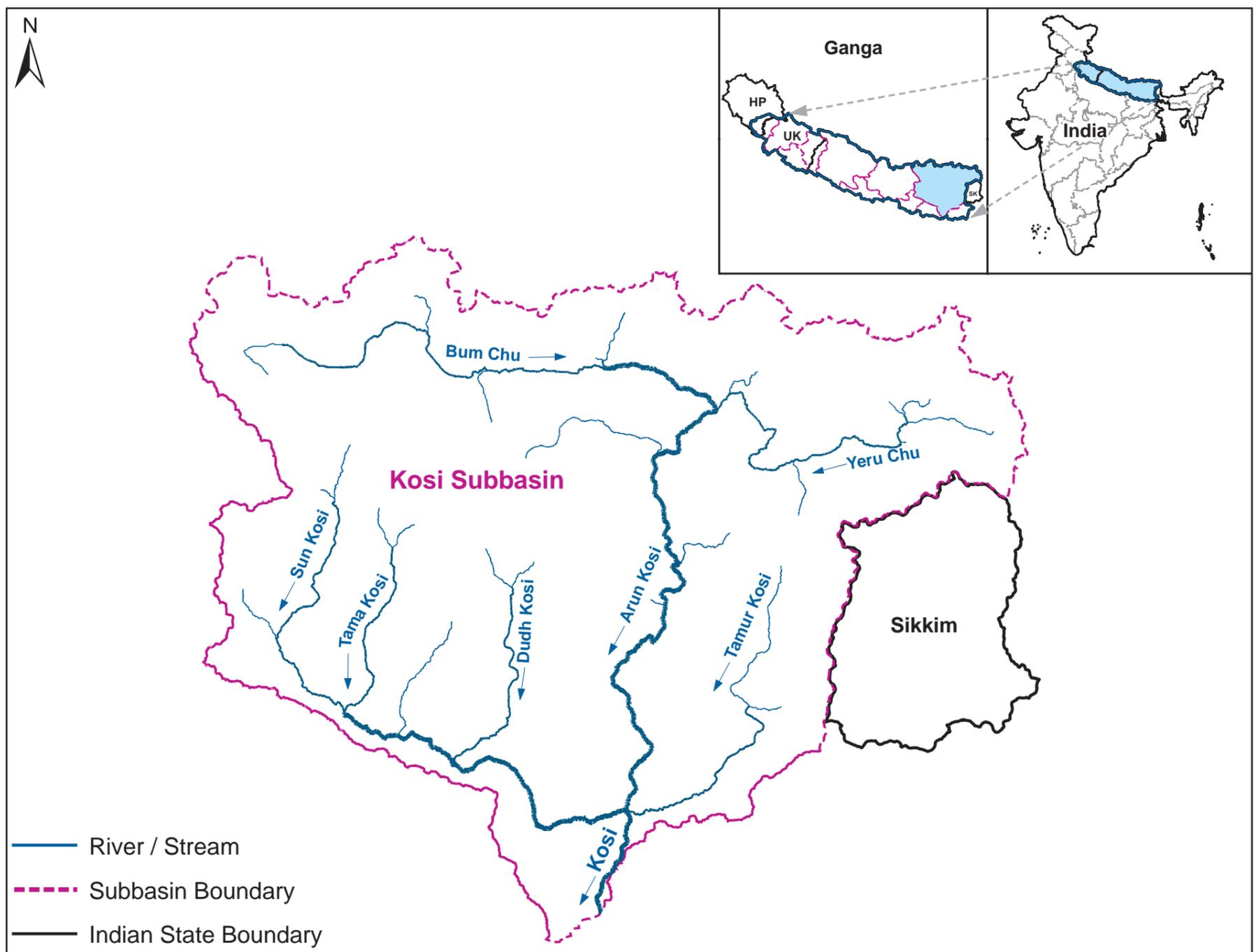
Figure 30: Location map of the Kosi subbasin

Area range-wise Distribution

In Kosi subbasin, glacial lakes have been distributed in all 6 classes of area ranges. Table 24 and Figure 31 shows the area range-wise distribution of glacial lakes for the Kosi subbasin. About 2,039 (83.67%) lakes are with < 5 ha lake area contributing to 17.38% of total lake area. The remaining lakes with ≥ 5 ha in size are only 398 (16.33%) but contributing to 82.62% of total lake area in the subbasin.

Table 24: Area range-wise distribution of GL in Kosi subbasin

S. No.	Lake Area Range (ha)	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	0.25 - 0.5	606	215.04	1.47
2	0.5 - 1	571	406.11	2.78
3	1 - 5	862	1,917.98	13.13
4	5 - 10	174	1,205.76	8.26
5	10 - 50	170	3,650.33	25.00
6	≥ 50	54	7,209.12	49.36
	Total	**2,437**	**14,604.34**	**100.00**
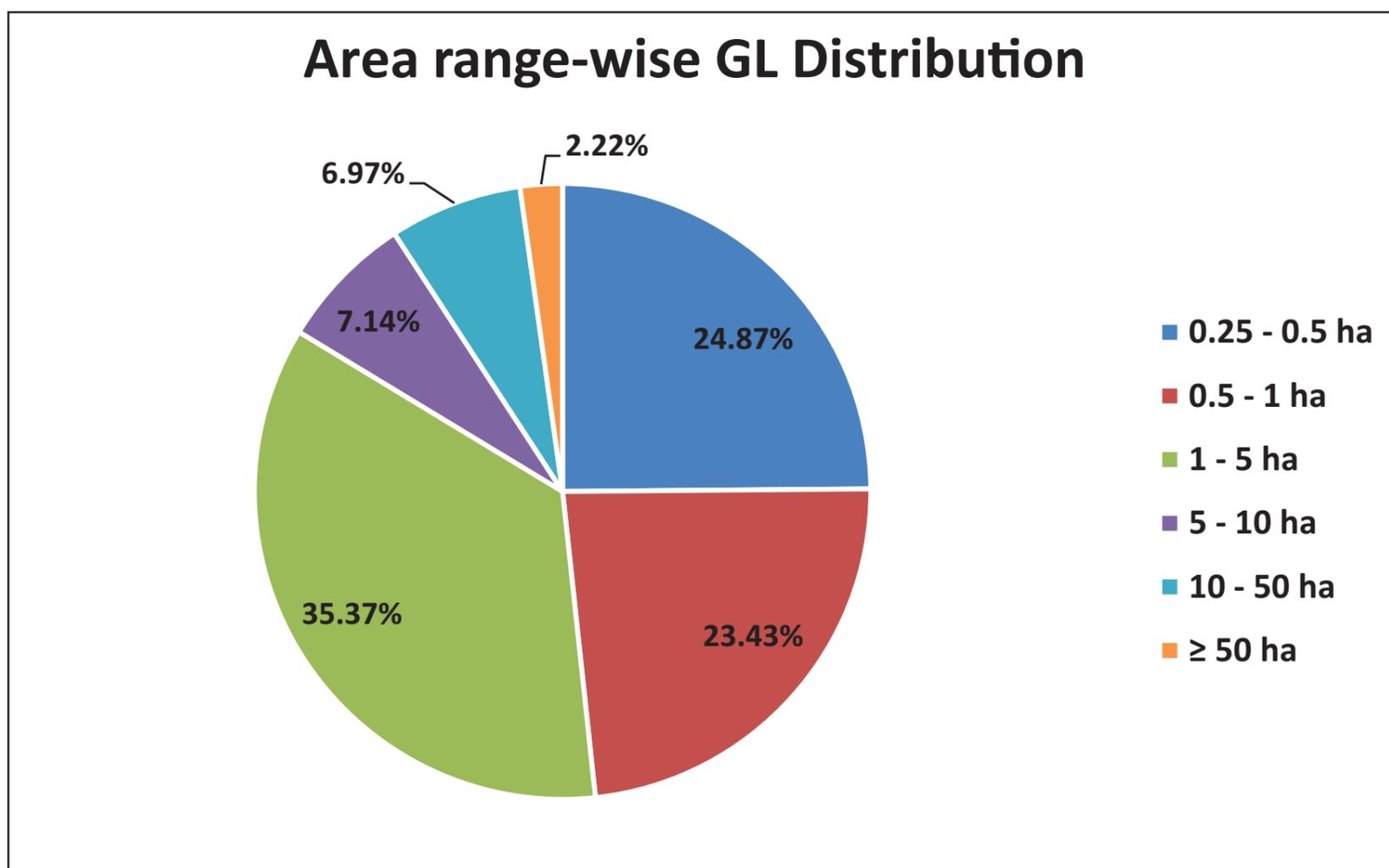
Figure 31: Area range-wise distribution of GL in Kosi subbasin

Type-wise Distribution

Distribution of different types of glacial lake in the Kosi subbasin is given in Table 25 and Figure 32. Out of 9 types of glacial lake, 7 types of lake are present in the Kosi subbasin, where Other Glacial Erosion lake is found to be the maximum with 986 (40.46%) occupying a total lake extent of 2,956.50 ha at 20.24% in the subbasin. After that, Other Moraine Dammed and Supra-glacial lakes are in majority with 829 (34.02%) and 335 (13.75%) and extend over a total lake area of 2,577.28 ha (17.65%) and 360.17 ha (2.47%) respectively.

Table 25: Type-wise distribution of GL in Kosi subbasin

S. No.	Code	Types of Glacial Lake	No. of Lakes	Total Lake Area (ha)	Total Lake Area (%)
1	M(e)	End-moraine Dammed Lake	138	7,243.03	49.60
2	M(l)	Lateral Moraine Dammed Lake	39	320.10	2.19
3	M(lg)	Lateral Moraine Dammed Lake with Ice	0	0.00	0.00
4	M(o)	Other Moraine Dammed Lake	829	2,577.28	17.65
5	I(s)	Supra-glacial Lake	335	360.17	2.47
6	I(d)	Glacier Ice-dammed Lake	0	0.00	0.00
7	E(c)	Cirque Erosion Lake	65	517.14	3.54
8	E(o)	Other Glacial Erosion Lake	986	2,956.50	20.24
9	O	Other Glacial Lake	45	630.12	4.31
		Total	**2,437**	**14,604.34**	**100.00**
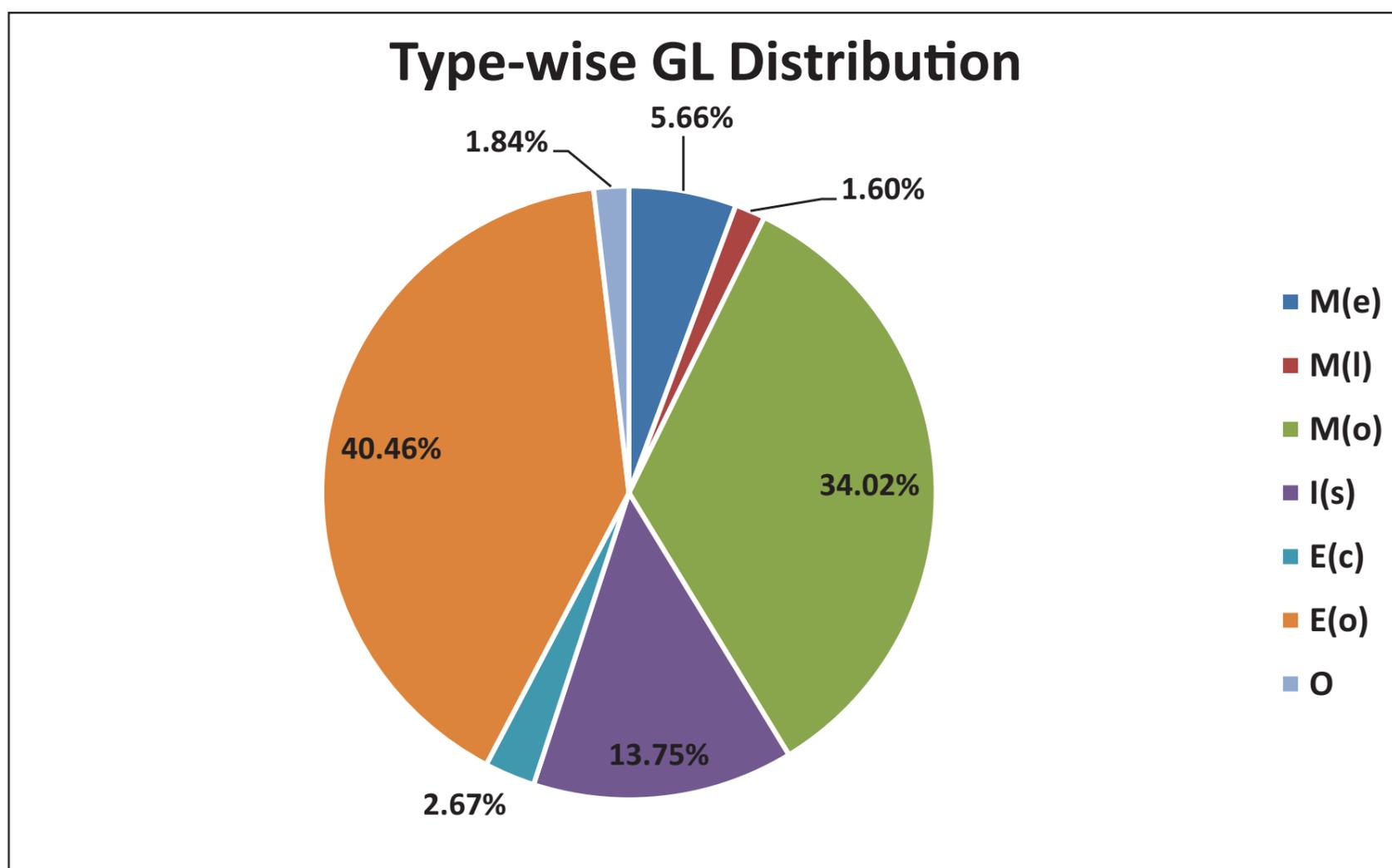
Figure 32: Type-wise distribution of GL in Kosi subbasin

Area range-Type-wise Distribution

Glacial lake distribution by area range vs. type-wise is given in Table 26 and Figure 33. The lakes with < 5 ha in size (83.67%) are dominant with Other Glacial Erosion (43.21%) and Other Moraine Dammed lakes (35.31%). Lakes with ≥ 5 ha (16.33%) are dominated by End-moraine Dammed type (28.89%). All types of Moraine-dammed lakes, which constitute about 41.28% are predominantly with < 5 ha in water spread.

Table 26: Area range-wise vs. Type-wise distribution of GL in Kosi subbasin

S. No.	Lake Area Range (ha)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	0.25 - 0.5	1	9	0	205	178	0	2	199	12	606
2	0.5 - 1	5	7	0	200	94	0	0	257	8	571
3	1 - 5	17	15	0	315	54	0	27	425	9	862
4	5 - 10	21	1	0	62	4	0	17	65	4	174
5	10 - 50	54	4	0	45	5	0	19	35	8	170
6	≥ 50	40	3	0	2	0	0	0	5	4	54
	Total	138	39	0	829	335	0	65	986	45	2,437
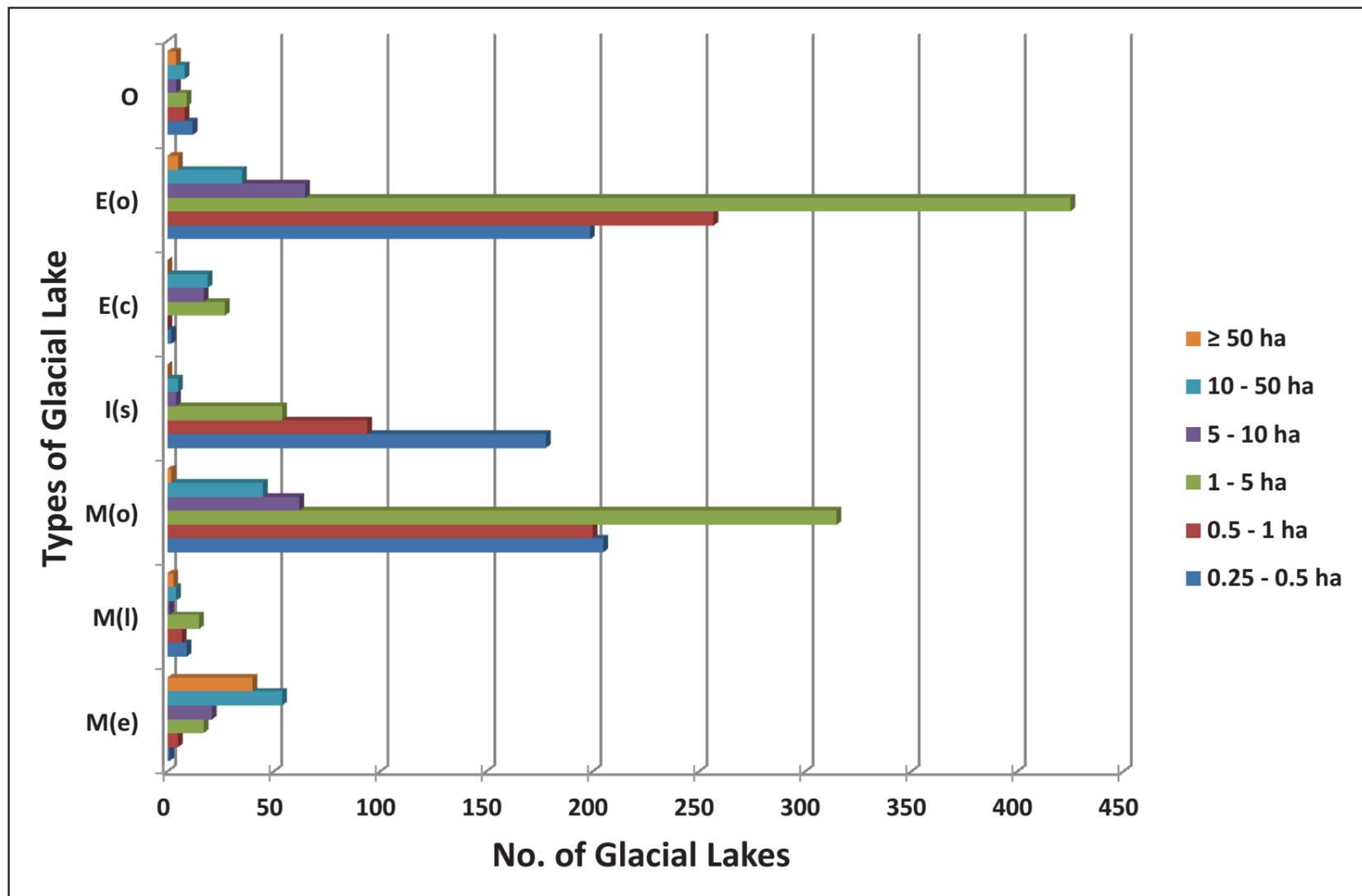
Figure 33: Area range-wise vs. Type-wise distribution of GL in Kosi subbasin

Elevation range-wise Distribution

Elevation range-wise distribution of the glacial lakes in the Kosi subbasin has been shown in Table 27 and Figure 34. Majority of glacial lakes are situated above 4,000 m elevation range i.e. 2,416 (99.14%) with total lake area of 14,513.60 ha (99.38%) and remaining 0.86% glacial lakes are below 4,001 m elevation.

Table 27: Elevation range-wise distribution of GL in Kosi subbasin

S. No.	Elevation Range (m)	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	up to 3,000	0	0.00	0.00
2	3,001 - 4,000	21	90.74	0.62
3	4,001 - 5,000	856	4,049.65	27.73
4	> 5,000	1,560	10,463.95	71.65
	Total	2,437	14,604.34	100.00
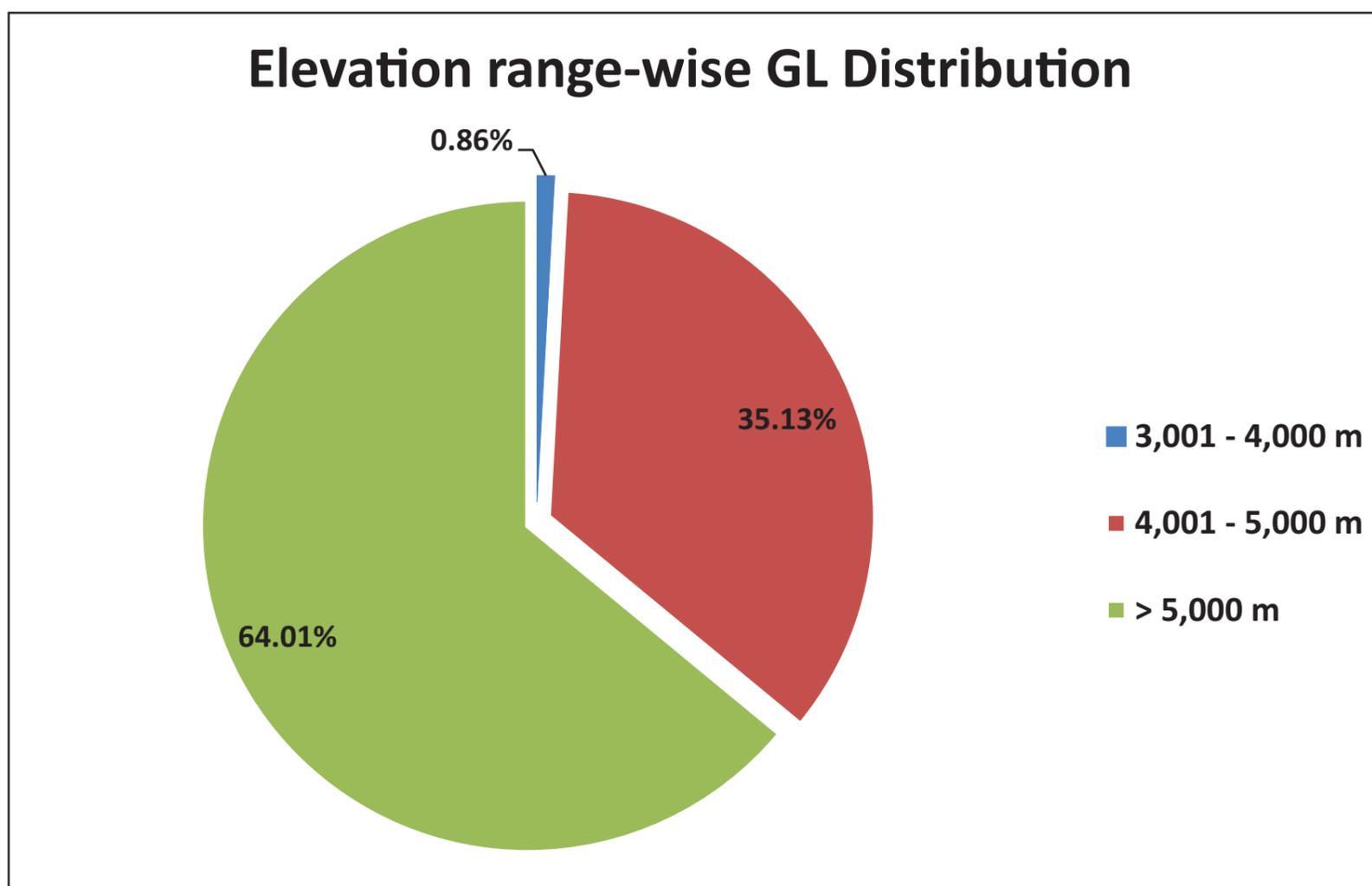
Figure 34: Elevation range-wise distribution of GL in Kosi subbasin

Area-Elevation range-wise Distribution

Glacial lake distribution has been analyzed as per area range vs. elevation range-wise, given in Table 28 and Figure 35. It is noted that, 64.01% of glacial lakes (1,560) are situated in very high altitude range i.e. > 5,000 m amsl, which also constitutes maximum total lake area within that range i.e. 71.65%. However, 260 glacial lakes lies above 5,000 m, which are ≥ 5 ha in size. 83.33% of lakes lying in very high altitude range are < 5 ha, predominantly of size ranging 1 - 5 ha (i.e. 516), followed by lakes of size 0.25 - 0.5 ha (i.e. 411). It has been further noticed that, 65.33% of lakes ≥ 5 ha are lying within in very high altitude range i.e. > 5,000 m, majority of them falling in size range of 10 - 50 ha.

Table 28: Area range-wise vs. Elevation range-wise distribution of GL in Kosi subbasin

| S. No. | Lake Area Range (ha) | Elevation Range (m) | | | | | | | | Total | |
| | | up to 3,000 | | 3,001 - 4,000 | | 4,001 - 5,000 | | > 5,000 | | | |
		No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Lake Area (ha)
1	0.25 - 0.5	0	0.00	4	1.22	191	68.94	411	144.89	606	215.04
2	0.5 - 1	0	0.00	3	2.10	195	142.19	373	261.82	571	406.11
3	1 - 5	0	0.00	9	25.89	337	757.61	516	1,134.47	862	1,917.98
4	5 - 10	0	0.00	2	13.45	65	469.40	107	722.91	174	1,205.76
5	10 - 50	0	0.00	3	48.08	52	1,032.06	115	2,570.19	170	3,650.33
6	≥ 50	0	0.00	0	0.00	16	1,579.44	38	5,629.67	54	7,209.12
	Total	**0**	**0.00**	**21**	**90.74**	**856**	**4,049.65**	**1,560**	**10,463.95**	**2,437**	**14,604.34**
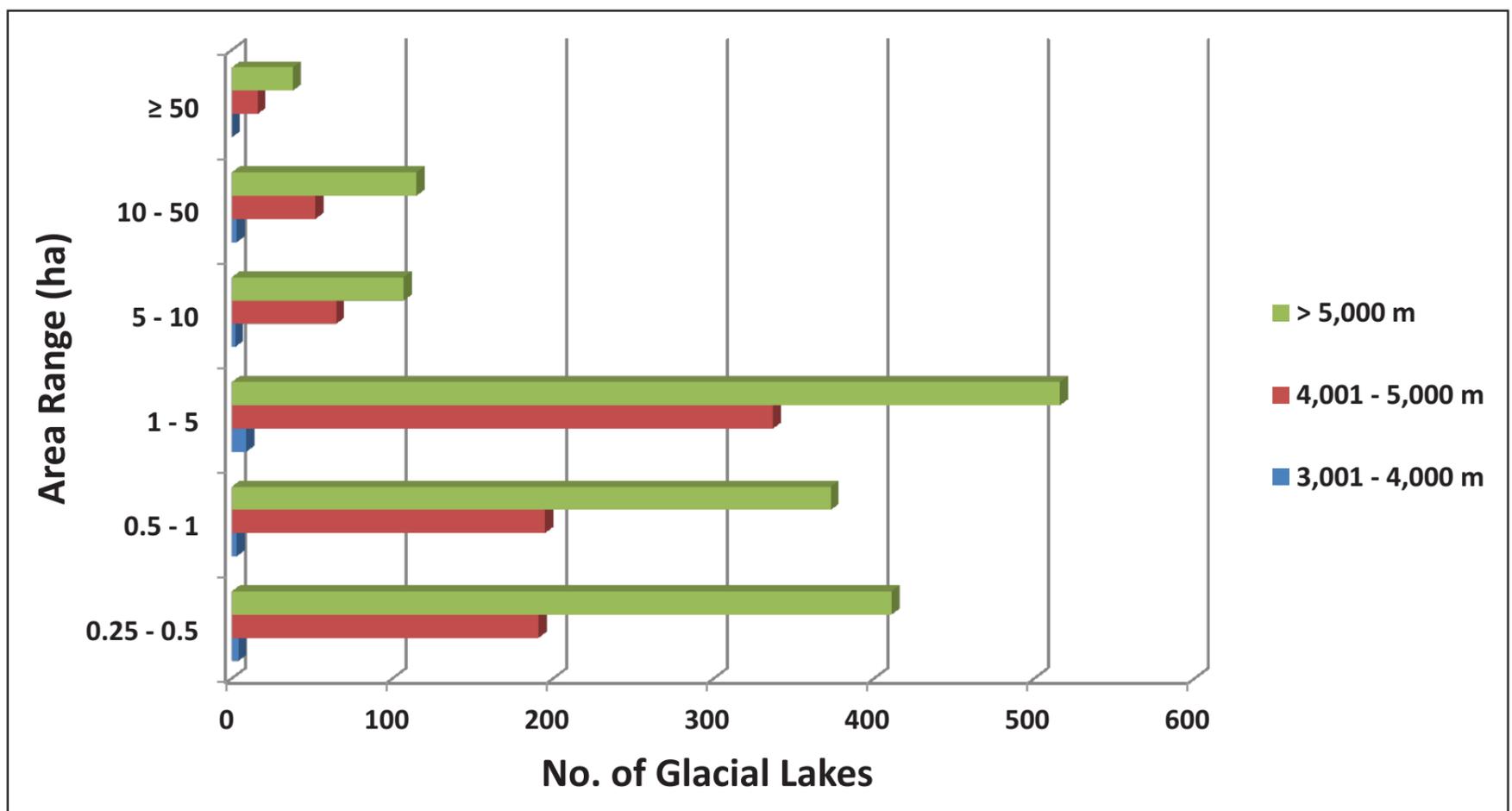
Figure 35: Area range-wise vs. Elevation range-wise distribution of GL in Kosi subbasin

Type-Elevation range-wise Distribution

Glacial lake distribution has also been analyzed as per type-wise vs. elevation range-wise, given in Table 29 and Figure 36. The dominant lake type in the subbasin i.e. Other Glacial Erosion lake (40.46%) is predominantly located in the elevation range of > 4,000 m (98.58%). The other dominant lake type, namely, Other Moraine Dammed and Supra-glacial lakes are distributed predominantly in > 5,000 m elevation range i.e. 83.47% and 68.06%. Majority of all types of Moraine-dammed (99.90%) and Glacier Erosion lake (98.57%) lies above 4,000 m elevation. Elevation range-type-wise spatial distribution of glacial lakes has been represented in Figure 37.

Table 29: Type-wise vs. Elevation range-wise distribution of GL in Kosi subbasin

S. No.	Elevation Range (m)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	up to 3,000	0	0	0	0	0	0	0	0	0	0
2	3,001 - 4,000	0	0	0	1	4	0	1	14	1	21
3	4,001 - 5,000	32	20	0	136	103	0	56	484	25	856
4	> 5,000	106	19	0	692	228	0	8	488	19	1,560
	Total	**138**	**39**	**0**	**829**	**335**	**0**	**65**	**986**	**45**	**2,437**
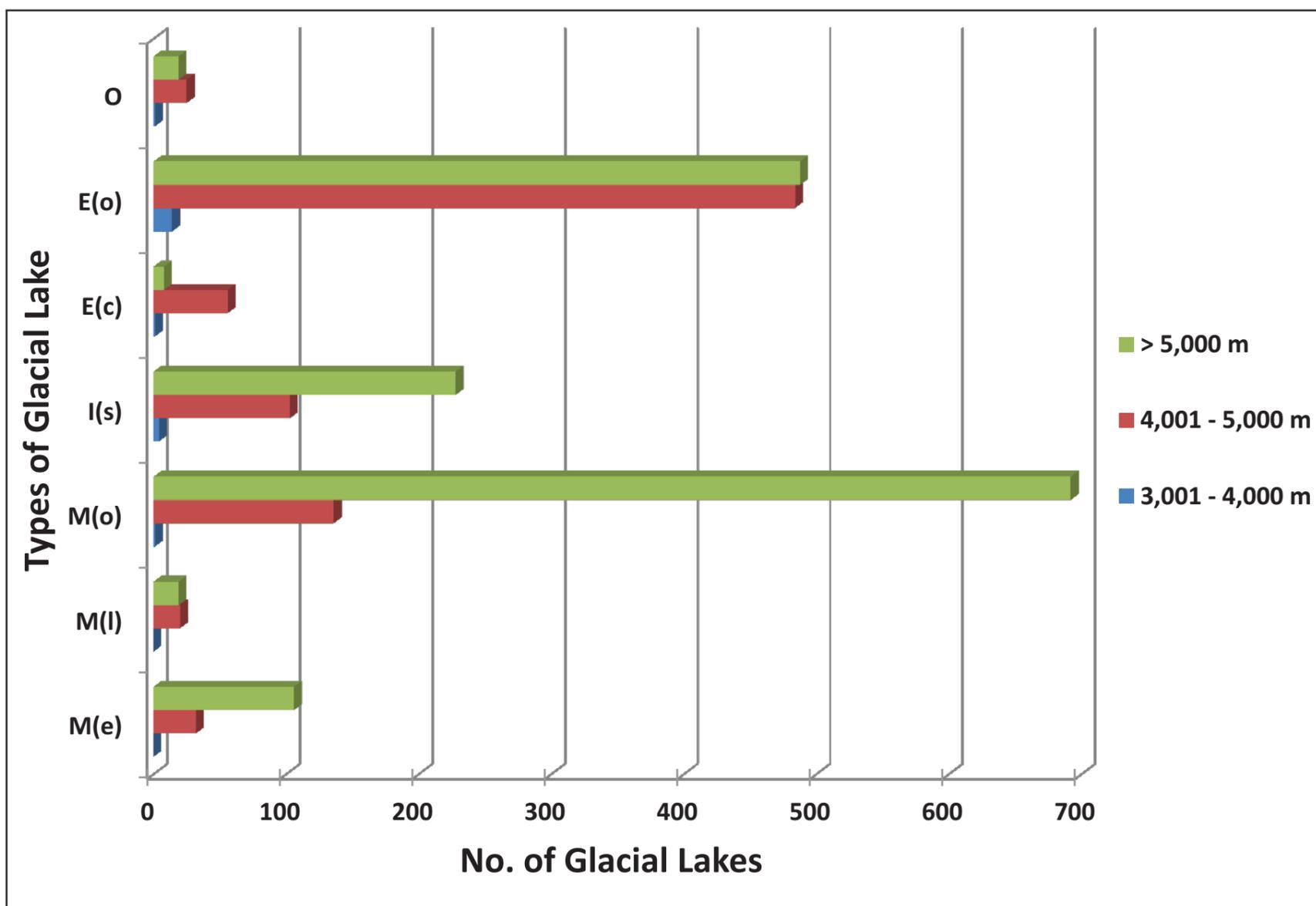
Figure 36: Type-wise vs. Elevation range-wise distribution of GL in Kosi subbasin

Kosi Subbasin

Subbasin Boundary

Elevation Range (m)

up to 3,000

3,001 - 4,000

4,001 - 5,000

> 5,000

Major Glacial Lake Type

- Moraine-dammed Lake
- Ice-dammed Lake
- Glacier Erosion Lake
- Other Glacial Lake
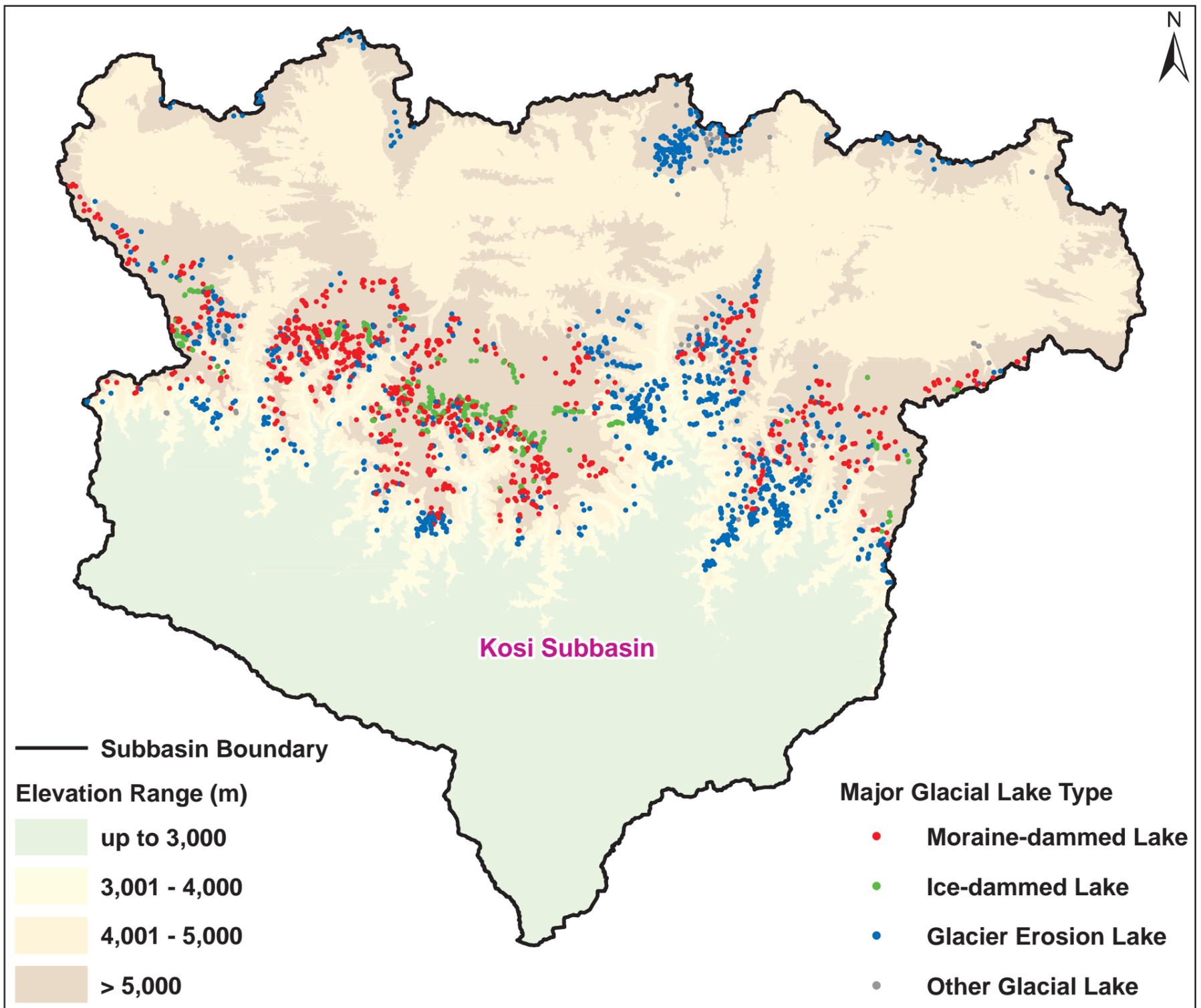
Figure 37: Elevation range–Type–wise spatial distribution of GL in Kosi subbasin

5.2.4 Sarda Subbasin

The Sarda subbasin is the fifth largest subbasin of the Ganga River basin covering a total area of 17,326 Km^2 i.e. 7.01% of the total basin area (Figure 38). Sarda River also known as Mahakali River, originates at Kalapani in the Himalayas at an elevation of 3,600 m amsl in the Pithoragarh district of Uttarakhand. It flows along Nepal's western border with India. A total of 55 glacial lakes has been mapped, covering a total area of 118.84 ha i.e. 0.01% of the total area of the subbasin.
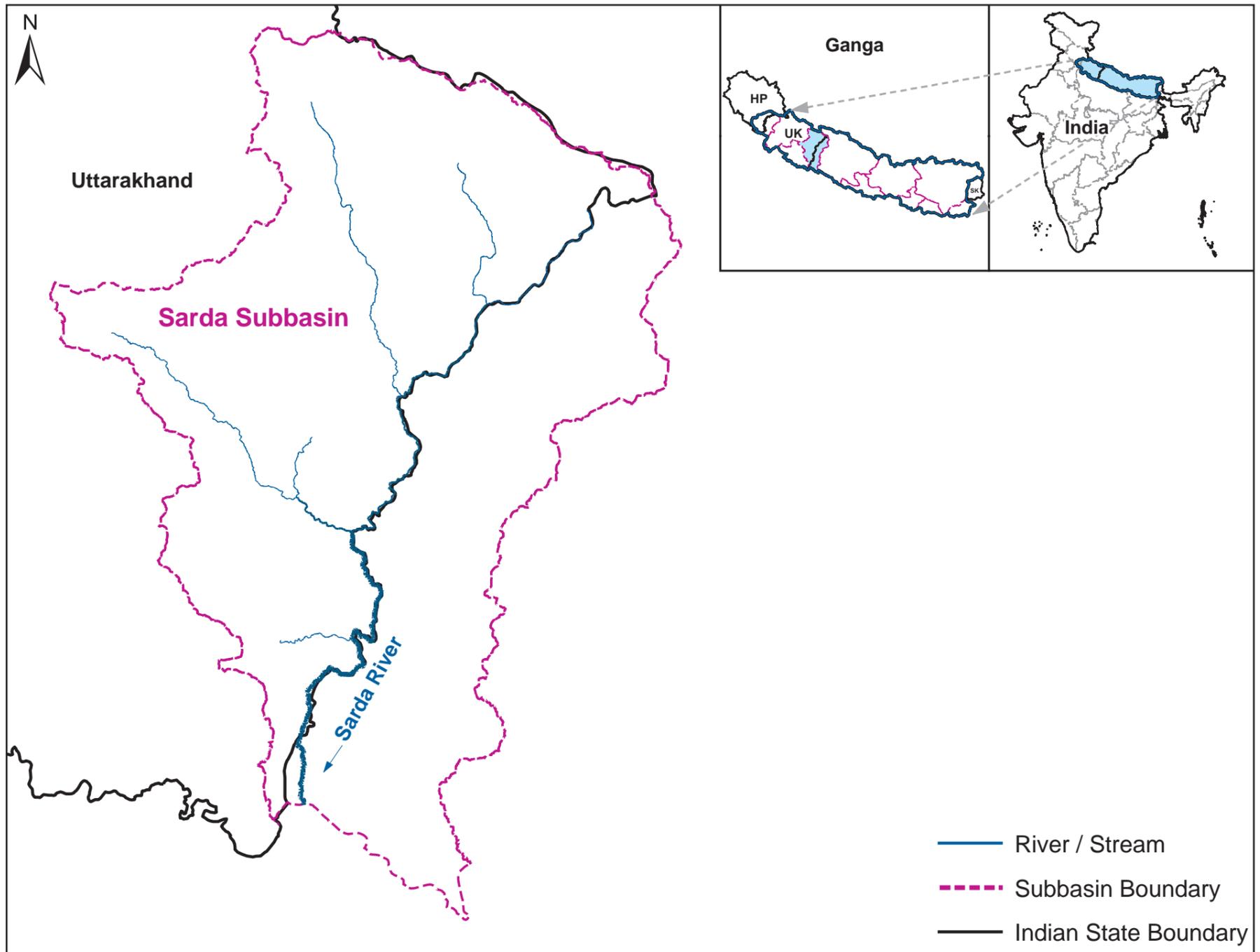
Figure 38: Location map of the Sarda subbasin

Area range-wise Distribution

In Sarda subbasin, glacial lakes have been distributed in 5 classes of area ranges except ≥ 50 ha range. Table 30 and Figure 39 shows the area range-wise distribution of glacial lakes for the Sarda subbasin. About 48 (87.28%) lakes are with < 5 ha lake area contributing to 44.97% of total lake area. The remaining lakes with ≥ 5 ha in size are only 7 (12.72%) contributing to 55.03% of total lake area in the subbasin.

Table 30: Area range-wise distribution of GL in Sarda subbasin

S. No.	Lake Area Range (ha)	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	0.25 - 0.5	16	5.75	4.84
2	0.5 - 1	13	8.54	7.19
3	1 - 5	19	39.15	32.94
4	5 - 10	4	26.38	22.20
5	10 - 50	3	39.02	32.83
6	≥ 50	0	0.00	0.00
	Total	**55**	**118.84**	**100.00**
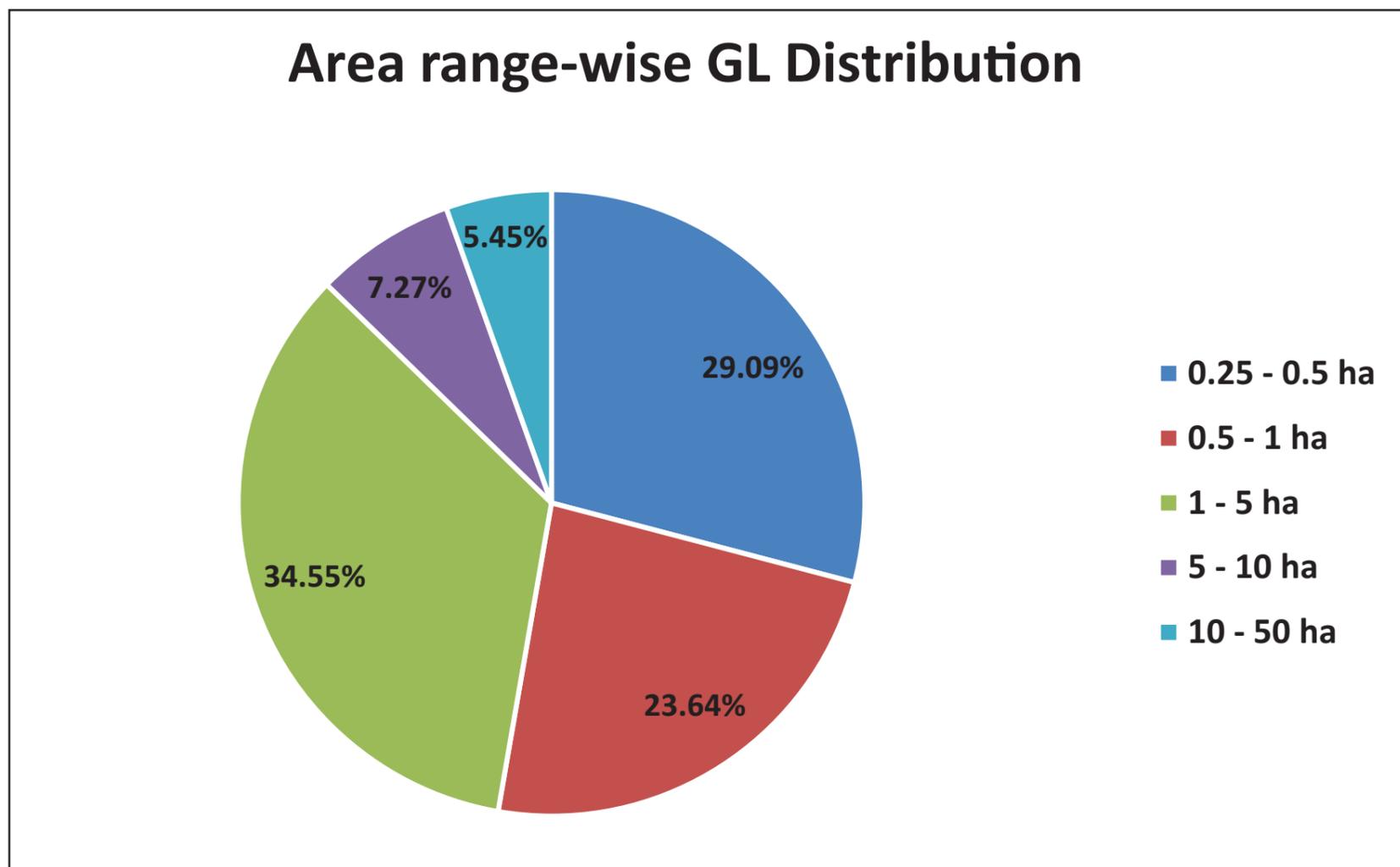
Figure 39: Area range-wise distribution of GL in Sarda subbasin

Type-wise Distribution

Distribution of different types of glacial lake in the Sarda subbasin is given in Table 31 and Figure 40. Out of 9 types of glacial lake, 7 types of lake are present in the Sarda subbasin, where Other Moraine Dammed lake is found to be the maximum with 21 (38.18%) occupying a total lake extent of 24.24 ha at 20.40% in the subbasin. After that, Other Glacial Erosion and Supra-glacial lakes are in majority with 13 (23.64%) and 6 (10.91%), extend over a total lake area of 14.03 ha (11.81%) and 3.13 ha (2.63%) respectively.

Table 31: Type-wise distribution of GL in Sarda subbasin

S. No.	Code	Types of Glacial Lake	No. of Lakes	Total Lake Area (ha)	Total Lake Area (%)
1	M(e)	End-moraine Dammed Lake	5	42.42	35.69
2	M(l)	Lateral Moraine Dammed Lake	5	14.37	12.09
3	M(lg)	Lateral Moraine Dammed Lake with Ice	0	0.00	0.00
4	M(o)	Other Moraine Dammed Lake	21	24.24	20.40
5	I(s)	Supra-glacial Lake	6	3.13	2.63
6	I(d)	Glacier Ice-dammed Lake	0	0.00	0.00
7	E(c)	Cirque Erosion Lake	4	20.38	17.15
8	E(o)	Other Glacial Erosion Lake	13	14.03	11.81
9	O	Other Glacial Lake	1	0.27	0.23
		Total	**55**	**118.84**	**100.00**
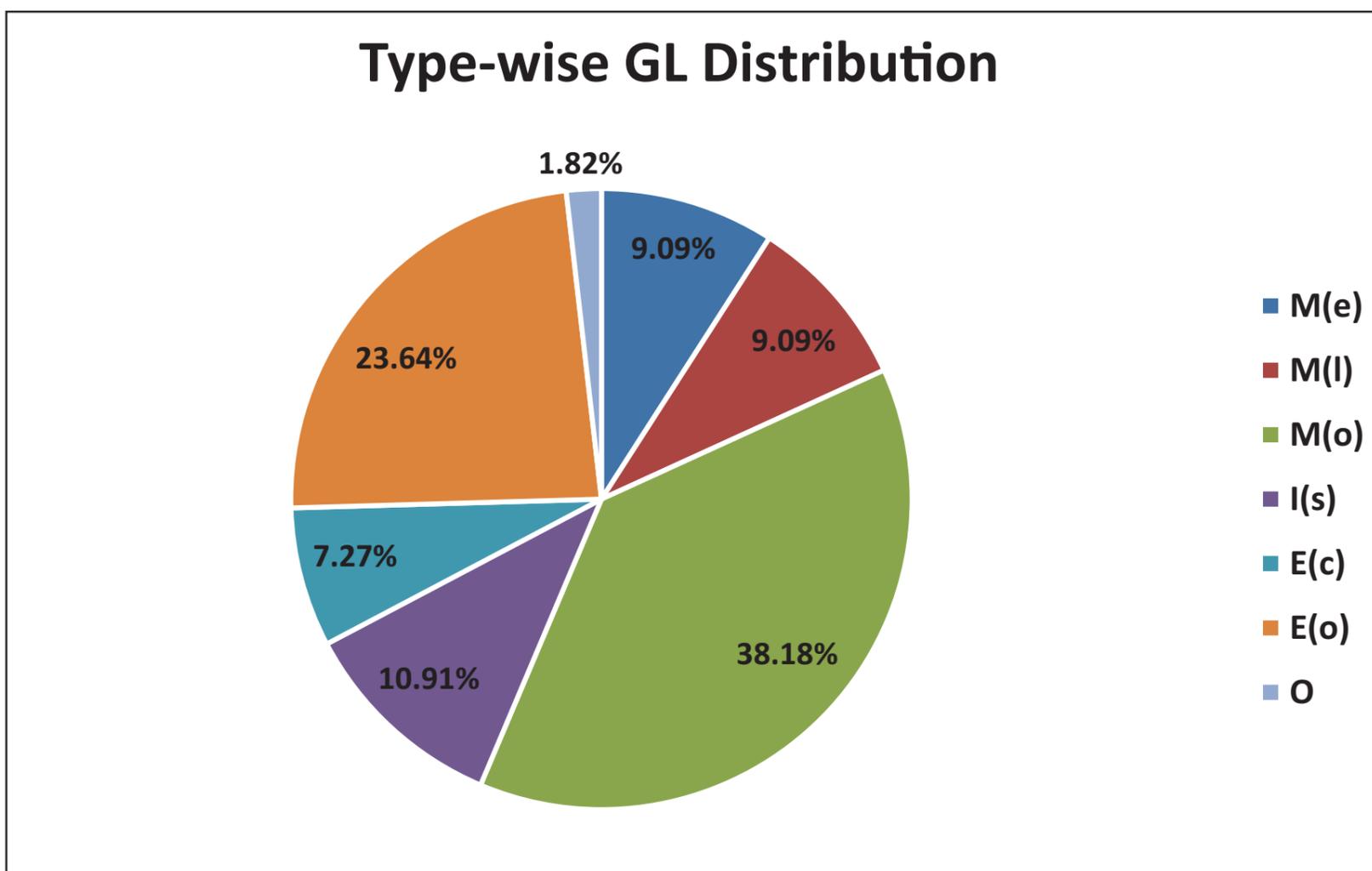
Figure 40: Type-wise distribution of GL in Sarda subbasin

Area range-Type-wise Distribution

Glacial lake distribution by area range vs. type-wise is given in Table 32 and Figure 41. The lakes with < 5 ha in size (87.28%) are dominant with Other Moraine Dammed (41.67%) and Other Glacial Erosion lakes (27.08%). Lakes with ≥ 5 ha (12.72%) are dominated by End-moraine Dammed type (42.86%). All types of Moraine-dammed lakes, which constitute about 56.36% are predominantly with < 5 ha in water spread.

Table 32: Area range-wise vs. Type-wise distribution of GL in Sarda subbasin

S. No.	Lake Area Range (ha)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	0.25 - 0.5	0	1	0	6	4	0	0	4	1	16
2	0.5 - 1	0	0	0	8	2	0	0	3	0	13
3	1 - 5	2	3	0	6	0	0	2	6	0	19
4	5 - 10	0	1	0	1	0	0	2	0	0	4
5	10 - 50	3	0	0	0	0	0	0	0	0	3
6	≥ 50	0	0	0	0	0	0	0	0	0	0
	Total	**5**	**5**	**0**	**21**	**6**	**0**	**4**	**13**	**1**	**55**
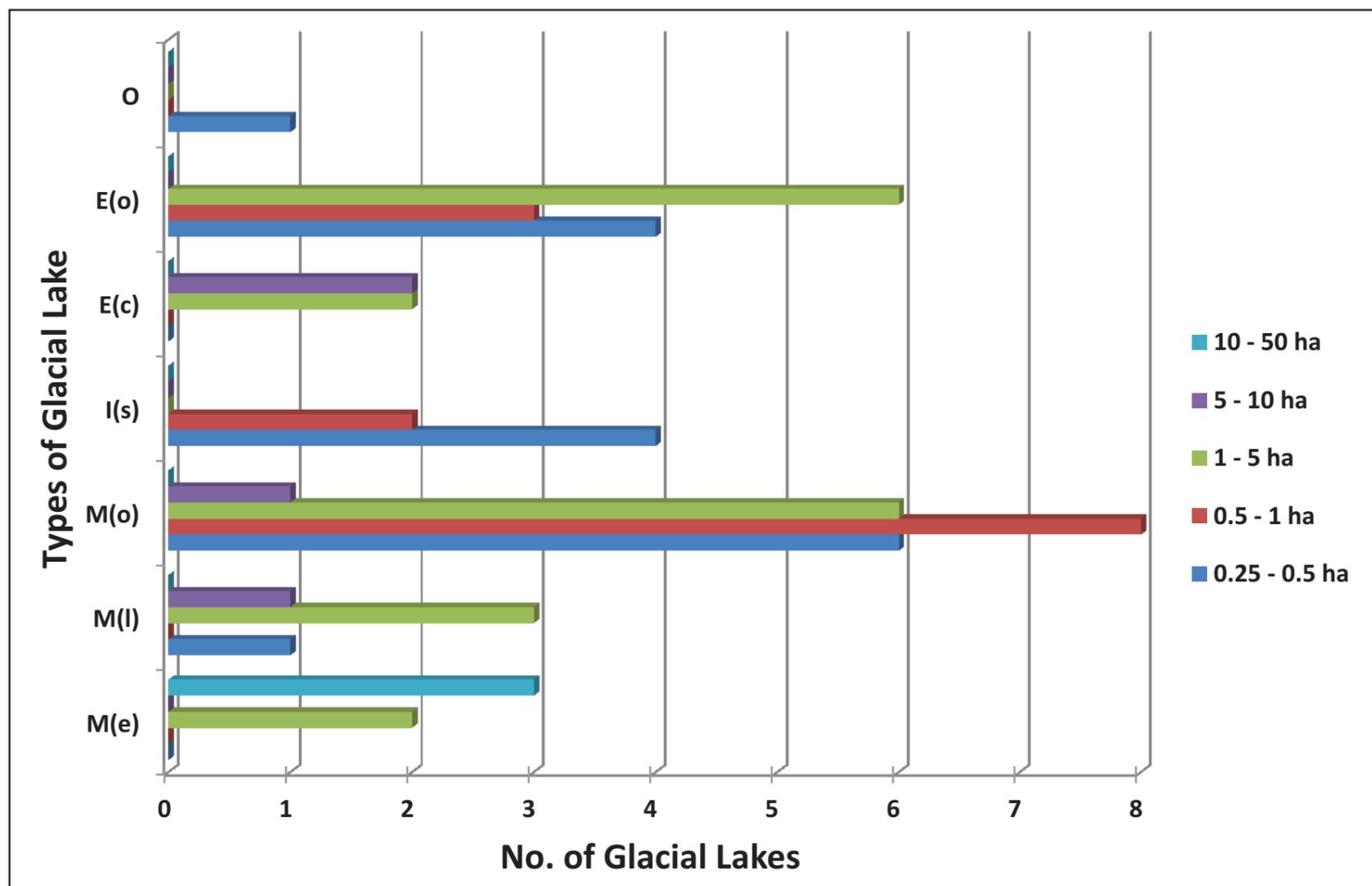
Figure 41: Area range-wise vs. Type-wise distribution of GL in Sarda subbasin

Elevation range-wise Distribution

Elevation range-wise distribution of the glacial lakes in the Sarda subbasin has been shown in Table 33 and Figure 42. Majority of glacial lakes are situated above 4,000 m elevation range i.e. 52 (94.55%) with total lake area of 117.92 ha (99.22%) and remaining 5.45% glacial lakes are below 4,001 m elevation.

Table 33: Elevation range-wise distribution of GL in Sarda subbasin

S. No.	Elevation Range (m)	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	up to 3,000	0	0.00	0.00
2	3,001 - 4,000	3	0.92	0.78
3	4,001 - 5,000	36	95.29	80.18
4	> 5,000	16	22.63	19.04
	Total	**55**	**118.84**	**100.00**
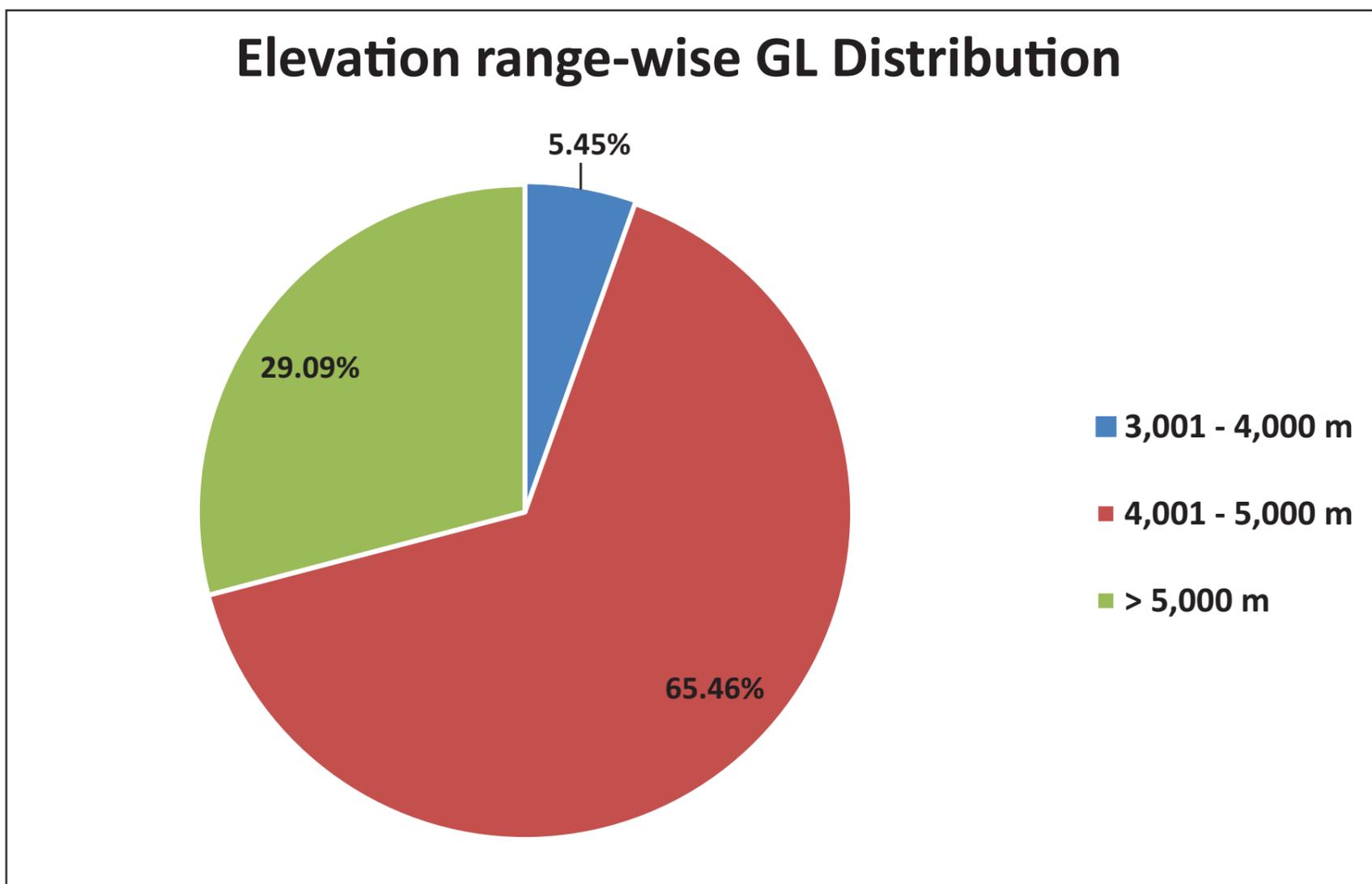
Figure 42: Elevation range-wise distribution of GL in Sarda subbasin

Area-Elevation range-wise Distribution

Glacial lake distribution has been analyzed as per area range vs. elevation range-wise, given in Table 34 and Figure 43. It is noted that, 65.46% of glacial lakes (36) are situated in high altitude range i.e. 4,001 - 5,000 m amsl, which constitutes major share of total lake area within that range i.e. 80.18%. However, only 3 glacial lakes lies below 4,001 m, has all of its lakes 0.25 - 0. 5 ha in size and in medium altitude range only. 93.75% of lakes lying in very high altitude range are < 5 ha, predominantly of size ranges 0.25 - 0. 5 ha and 1 - 5 ha (i.e. 6 each), followed by lakes of size 0.5 - 1 ha (i.e. 3). It has been further noticed that, 85.71% of lakes ≥ 5 ha are lying within in high altitude range i.e. 4,001 - 5,000 m, equally in lake size ranges of 5 - 10 ha and 10 - 50 ha.

Table 34: Area range-wise vs. Elevation range-wise distribution of GL in Sarda subbasin

| S. No. | Lake Area Range (ha) | Elevation Range (m) | | | | | | | | Total | |
| | | up to 3,000 | | 3,001 - 4,000 | | 4,001 - 5,000 | | > 5,000 | | | |
		No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Lake Area (ha)
1	0.25 - 0.5	0	0.00	3	0.93	7	2.55	6	2.27	16	5.75
2	0.5 - 1	0	0.00	0	0.00	10	6.71	3	1.83	13	8.54
3	1 - 5	0	0.00	0	0.00	13	25.90	6	13.25	19	39.15
4	5 - 10	0	0.00	0	0.00	3	21.10	1	5.28	4	26.38
5	10 - 50	0	0.00	0	0.00	3	39.02	0	0.00	3	39.02
6	≥ 50	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Total	0	0.00	3	0.93	36	95.28	16	22.63	55	118.84
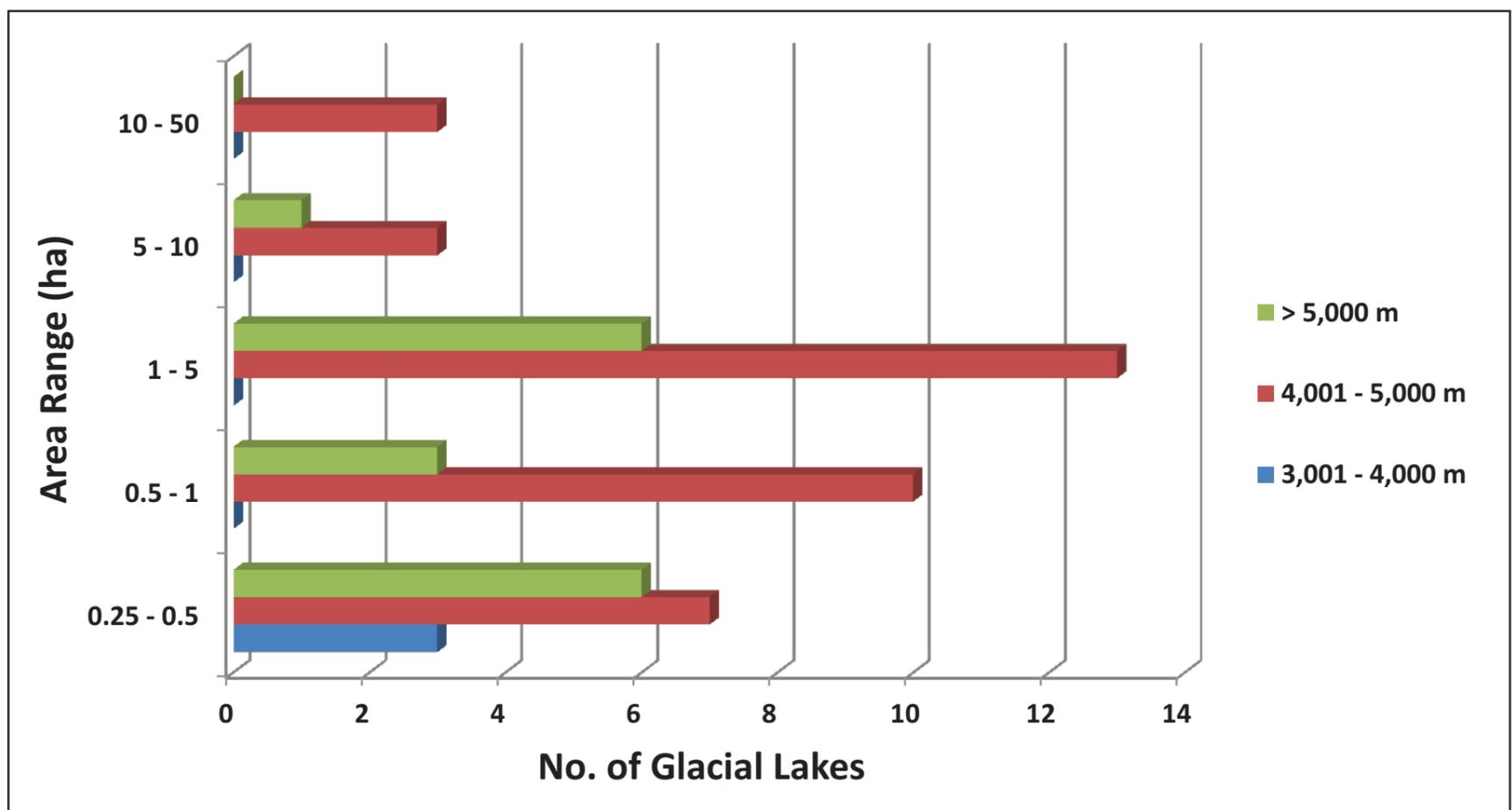
Figure 43: Area range-wise vs. Elevation range-wise distribution of GL in Sarda subbasin

Type-Elevation range-wise Distribution

Glacial lake distribution has also been analyzed as per type-wise vs. elevation range-wise, given in Table 35 and Figure 44. The dominant lake type in the subbasin i.e. Other Moraine Dammed lake (38.18%) is predominantly located in the elevation range of 4,001 - 5,000 m (61.90%). The other dominant lake type, namely, Other Glacial Erosion and Supra-glacial lakes are distributed predominantly in very high and high altitude elevation range, i.e. 53.85% and 100% respectively. Majority (93.55%) of all types of Moraine-dammed lakes lies above 4,000 m elevation. Elevation range-type-wise spatial distribution of glacial lakes has been represented in Figure 45.

Table 35: Type-wise vs. Elevation range-wise distribution of GL in Sarda subbasin

S. No.	Elevation Range (m)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	up to 3,000	0	0	0	0	0	0	0	0	0	0
2	3,001 - 4,000	0	0	0	2	0	0	0	0	1	3
3	4,001 - 5,000	5	5	0	13	6	0	1	6	0	36
4	> 5,000	0	0	0	6	0	0	3	7	0	16
	Total	**5**	**5**	**0**	**21**	**6**	**0**	**4**	**13**	**1**	**55**
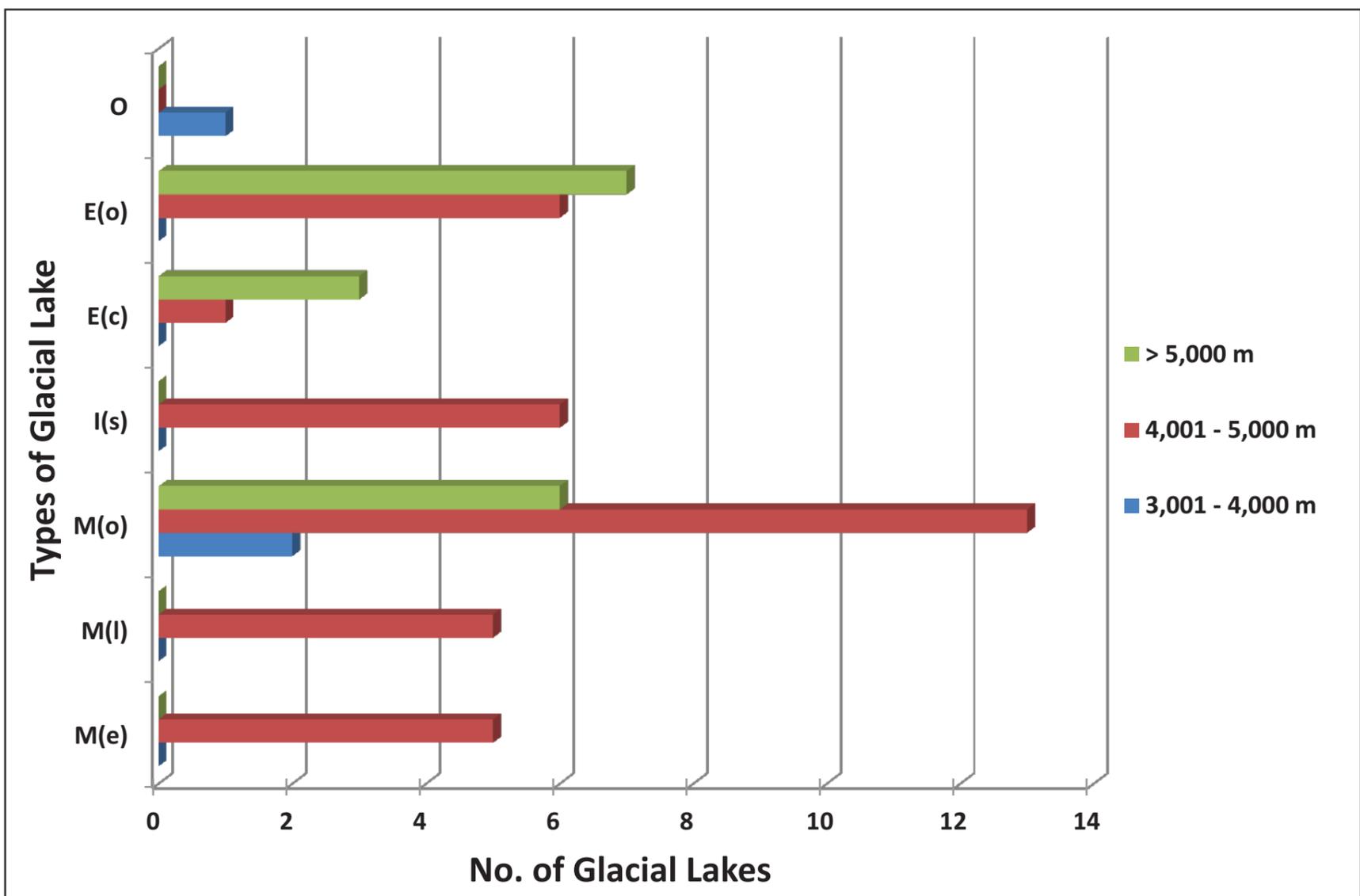
Figure 44: Type-wise vs. Elevation range-wise distribution of GL in Sarda subbasin
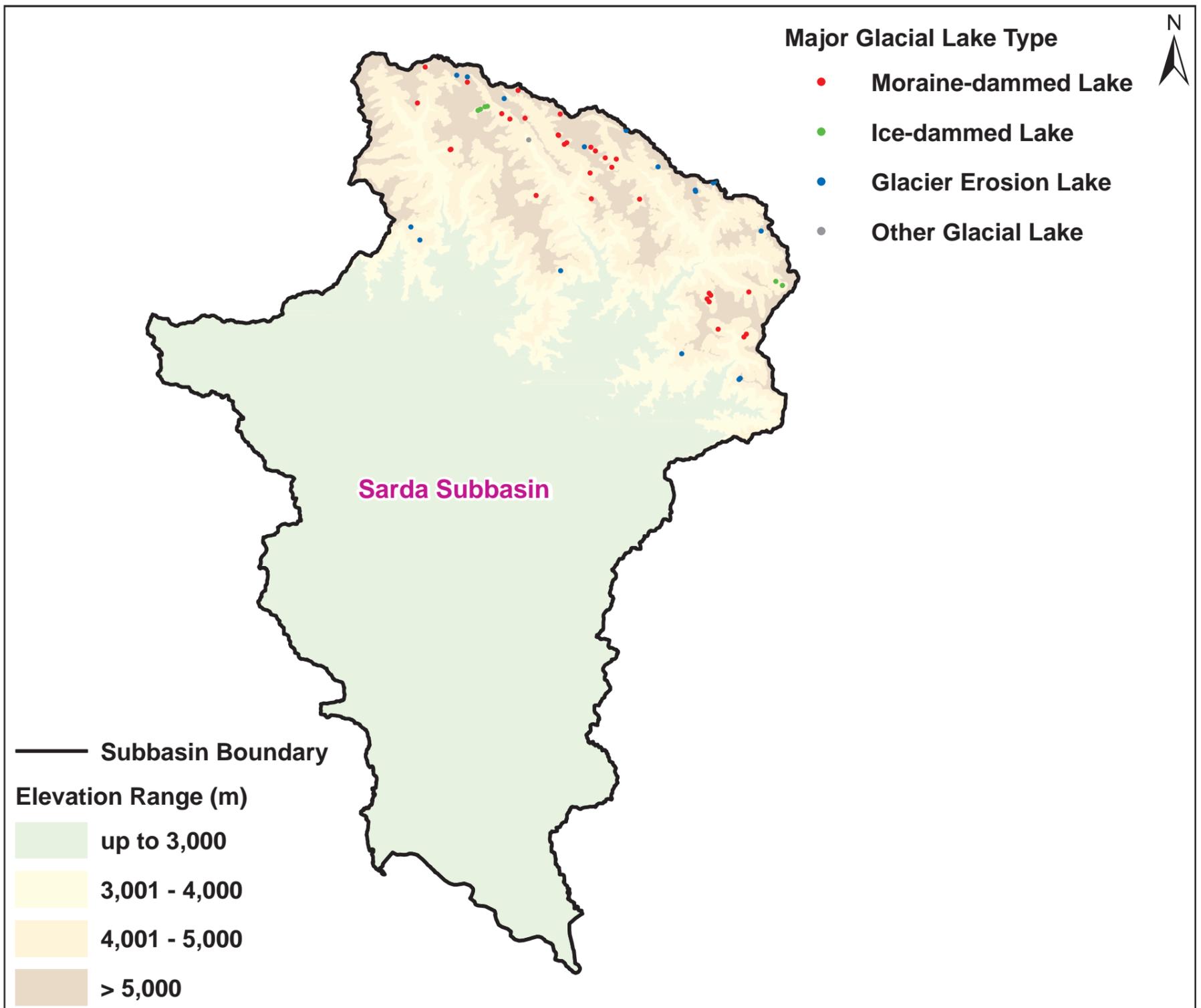
Figure 45: Elevation range-Type-wise spatial distribution of GL in Sarda subbasin

5.2.5 Upper Ganga Subbasin

The Upper Ganga subbasin is the fourth largest subbasin of the Ganga River basin covering a total area of 25,675 Km^2 i.e. 10.39% of the total basin area (Figure 46). Upper Ganga subbasin has two major tributaries viz., Bhagirathi and Alaknanda, which originates from Gangotri and Satopanth (north of the temple town of Badrinath) group of glaciers in upper regions of Uttarakhand. As these two rivers joins at Devprayag in Uttarakhand, river assumes the name 'Ganga'. Alaknanda on the other hand has several major tributaries viz., Dhauli Ganga (originates from Kamet group of glaciers, confluence at Vishnuprayag), Nandakini (confluence at Nandprayag), Pindar (confluence at Karnaprayag), and Mandakini (originates from Chorabari group of glaciers near Kedarnath, confluence at Rudraprayag). A total of 295 lakes were mapped, covering a total area of 447.26 ha i.e. 0.01% of the total area of the subbasin.
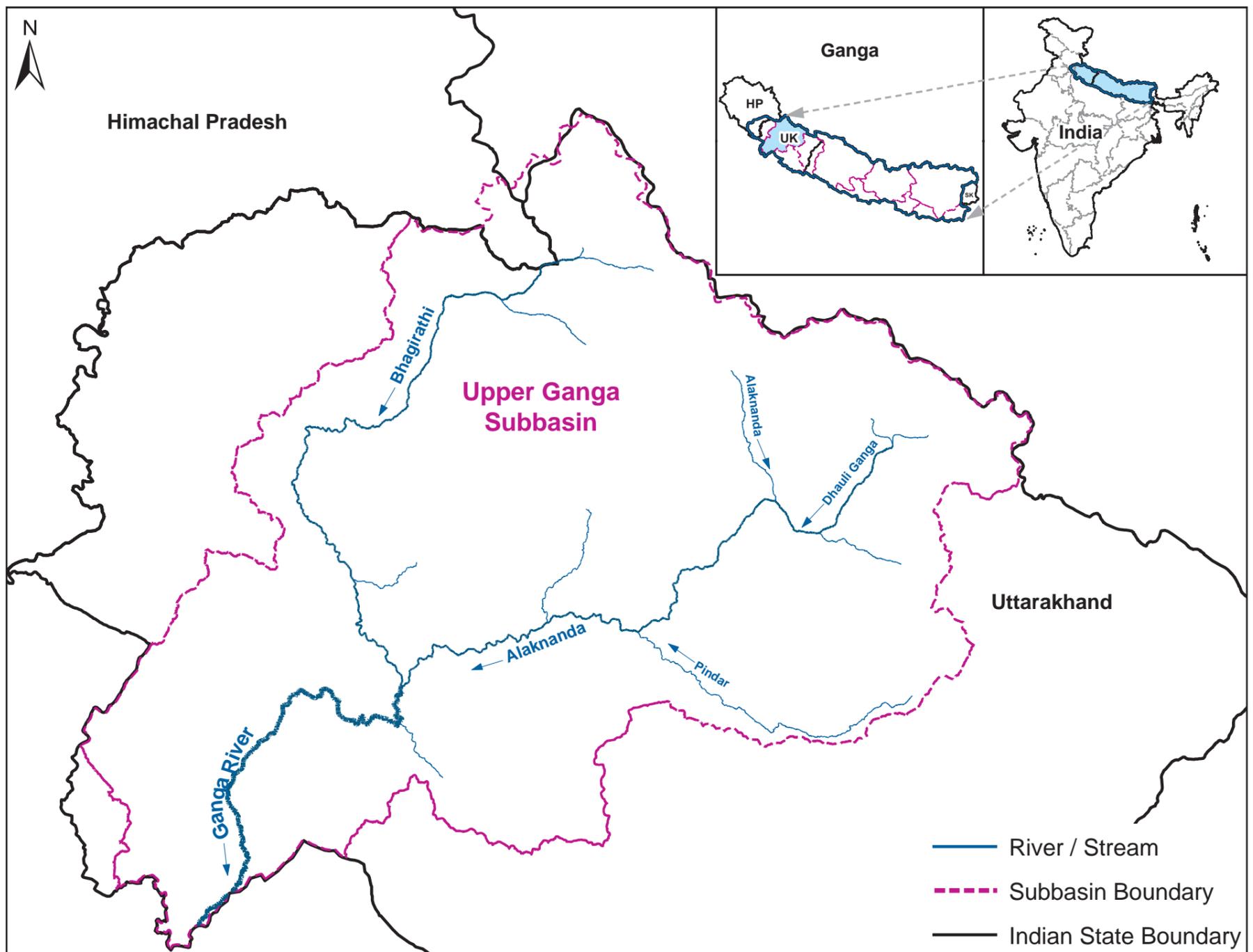
Figure 46: Location map of the Upper Ganga subbasin

Area range-wise Distribution

In Upper Ganga subbasin, glacial lakes have been distributed in 5 area ranges except ≥ 50 ha range. Table 36 and Figure 47 shows the area range-wise distribution of glacial lakes for the Upper Ganga subbasin. About 274 (92.88%) lakes are with < 5 ha lake area contributing to 56.59% of total lake area. The remaining lakes with ≥ 5 ha in size are only 21 (7.12%) contributing to 43.41% of total lake area in the subbasin.

Table 36: Area range-wise distribution of GL in Upper Ganga subbasin

S. No.	Lake Area Range (ha)	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	0.25 - 0.5	120	41.02	9.17
2	0.5 - 1	84	59.14	13.22
3	1 - 5	70	152.95	34.20
4	5 - 10	16	107.08	23.94
5	10 - 50	5	87.07	19.47
6	≥ 50	0	0.00	0.00
	Total	**295**	**447.26**	**100.00**
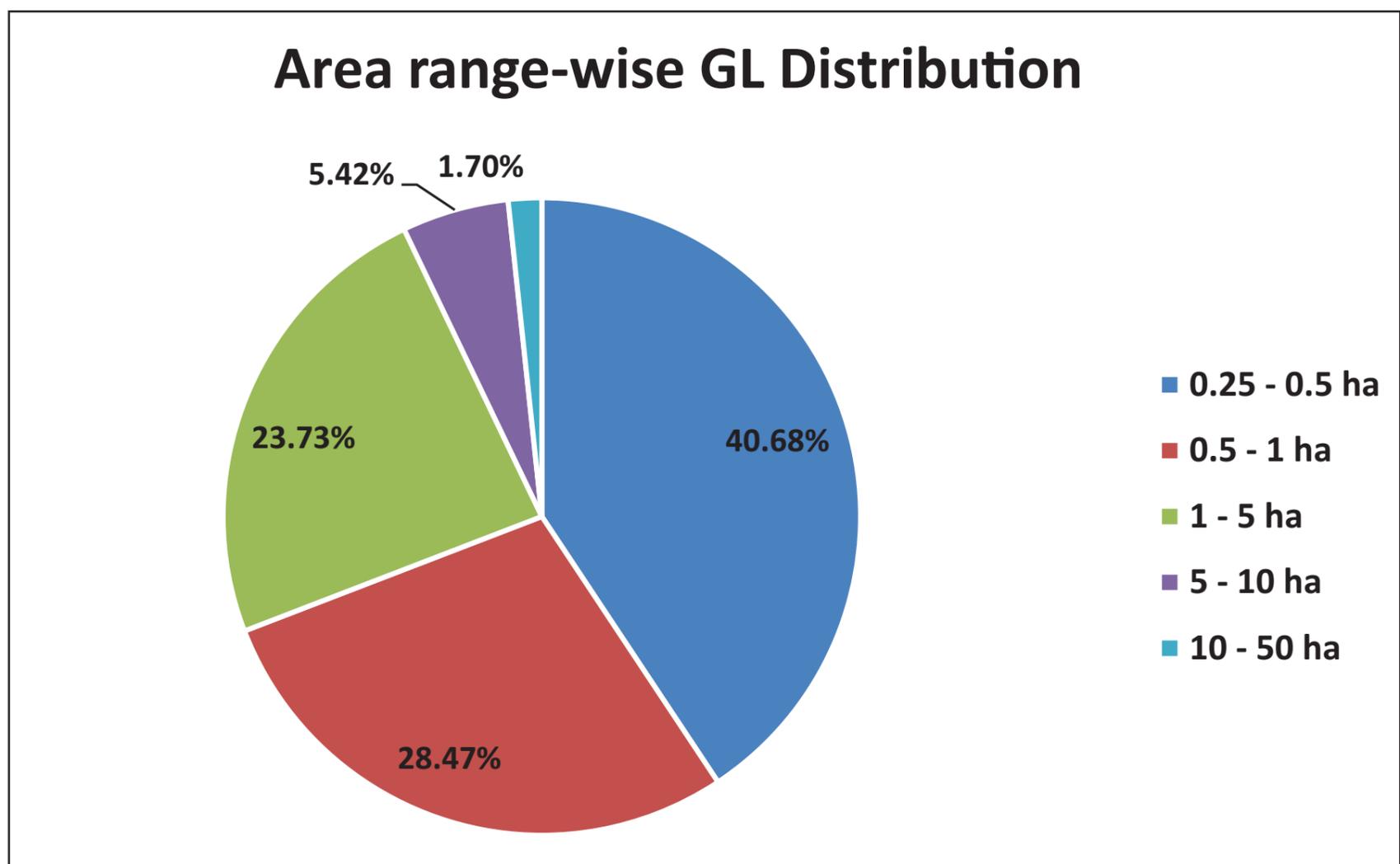
Figure 47: Area range-wise distribution of GL in Upper Ganga subbasin

Type-wise Distribution

Distribution of different types of glacial lake in the Upper Ganga subbasin is given in Table 37 and Figure 48. Out of 9 types of glacial lake, only 7 types of lake are present in the Upper Ganga subbasin, where Supra-glacial lake is found to be the maximum with 98 (33.22%) occupying a total lake area extent of 75.34 ha at 16.84% in the subbasin. Two other types of lake, namely, Other Moraine Dammed and Other Glacial Erosion lakes are 87 (29.49%) and 53 (17.97%) and extend over lake area of 105.41 ha (23.57%) and 66.82 ha (14.95%) respectively.

Table 37: Type-wise distribution of GL in Upper Ganga subbasin

| S. No.	Code	Types of Glacial Lake	No. of Lakes	Total Lake Area (ha)	Total Lake Area (%)
1	M(e)	End-moraine Dammed Lake	18	103.53	23.15
2	M(l)	Lateral Moraine Dammed Lake	11	20.42	4.56
3	M(lg)	Lateral Moraine Dammed Lake with Ice	0	0.00	0.00
4	M(o)	Other Moraine Dammed Lake	87	105.41	23.57
5	I(s)	Supra-glacial Lake	98	75.34	16.84
6	I(d)	Glacier Ice-dammed Lake	0	0.00	0.00
7	E(c)	Cirque Erosion Lake	20	66.39	14.84
8	E(o)	Other Glacial Erosion Lake	53	66.82	14.95
9	O	Other Glacial Lake	8	9.35	2.09
		Total	**295**	**447.26**	**100.00**
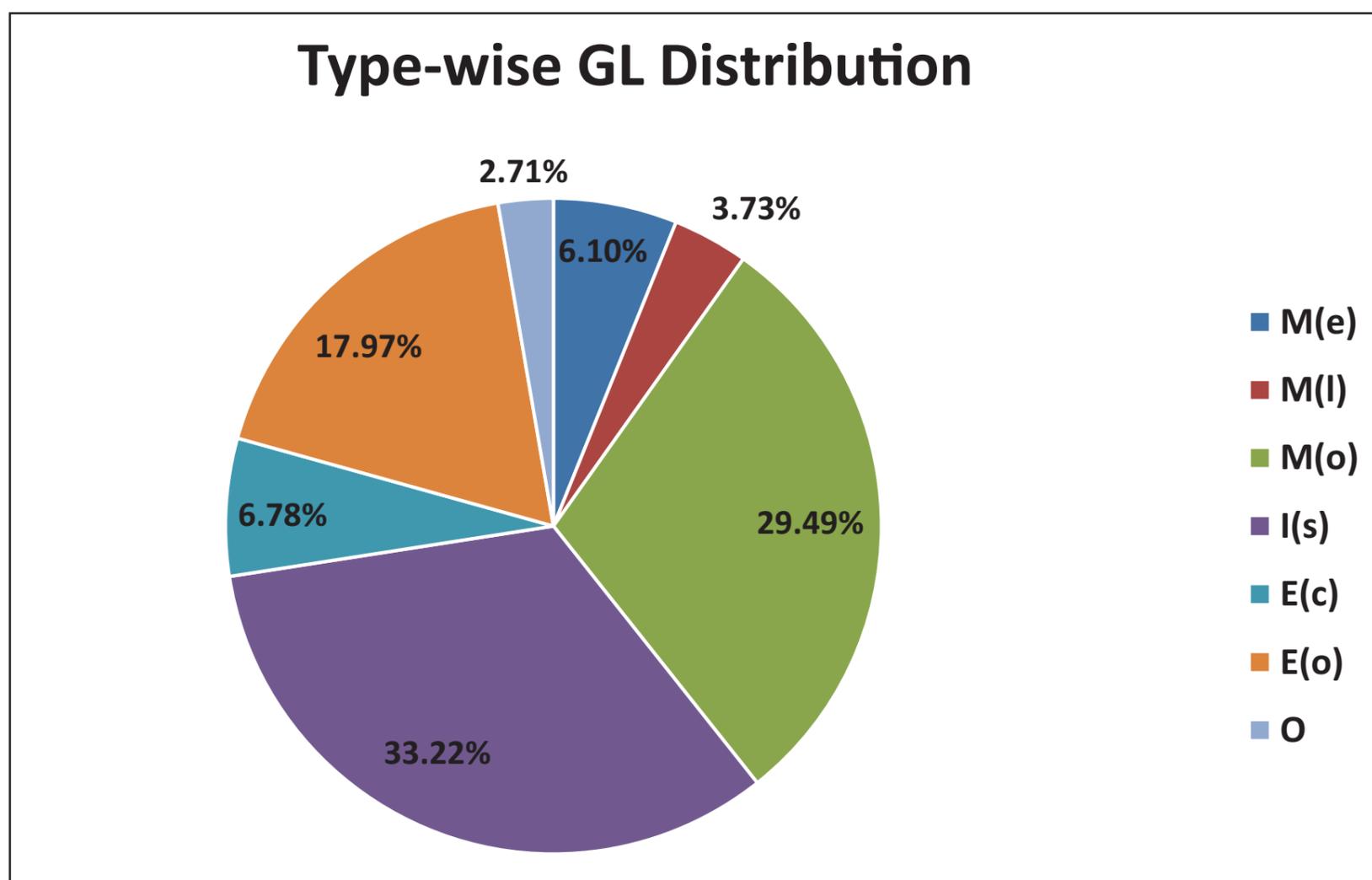
Figure 48: Type-wise distribution of GL in Upper Ganga subbasin

Area range-Type-wise Distribution

Glacial lake distribution by area range vs. type-wise is given in Table 38 and Figure 49. The lakes with < 5 ha in size (92.88%) are dominant with Supra-glacial (34.67%) and Other Moraine Dammed type (29.93%). Lakes with ≥ 5 ha (7.12%) are equally dominated by Cirque Erosion and Other Moraine Dammed type, predominantly in the lake size range of 5 - 10 ha. All types of Moraine-dammed lakes, which constitutes about 39.32% are predominantly with < 5 ha in water spread.

Table 38: Area range-wise vs. Type-wise distribution of GL in Upper Ganga subbasin

| S. No.	Lake Area Range (ha)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	0.25 - 0.5	1	1	0	31	66	0	1	17	3	120
2	0.5 - 1	1	5	0	31	24	0	5	16	2	84
3	1 - 5	12	4	0	20	5	0	9	17	3	70
4	5 - 10	1	1	0	5	1	0	5	3	0	16
5	10 - 50	3	0	0	0	2	0	0	0	0	5
6	≥ 50	0	0	0	0	0	0	0	0	0	0
	Total	**18**	**11**	**0**	**87**	**98**	**0**	**20**	**53**	**8**	**295**
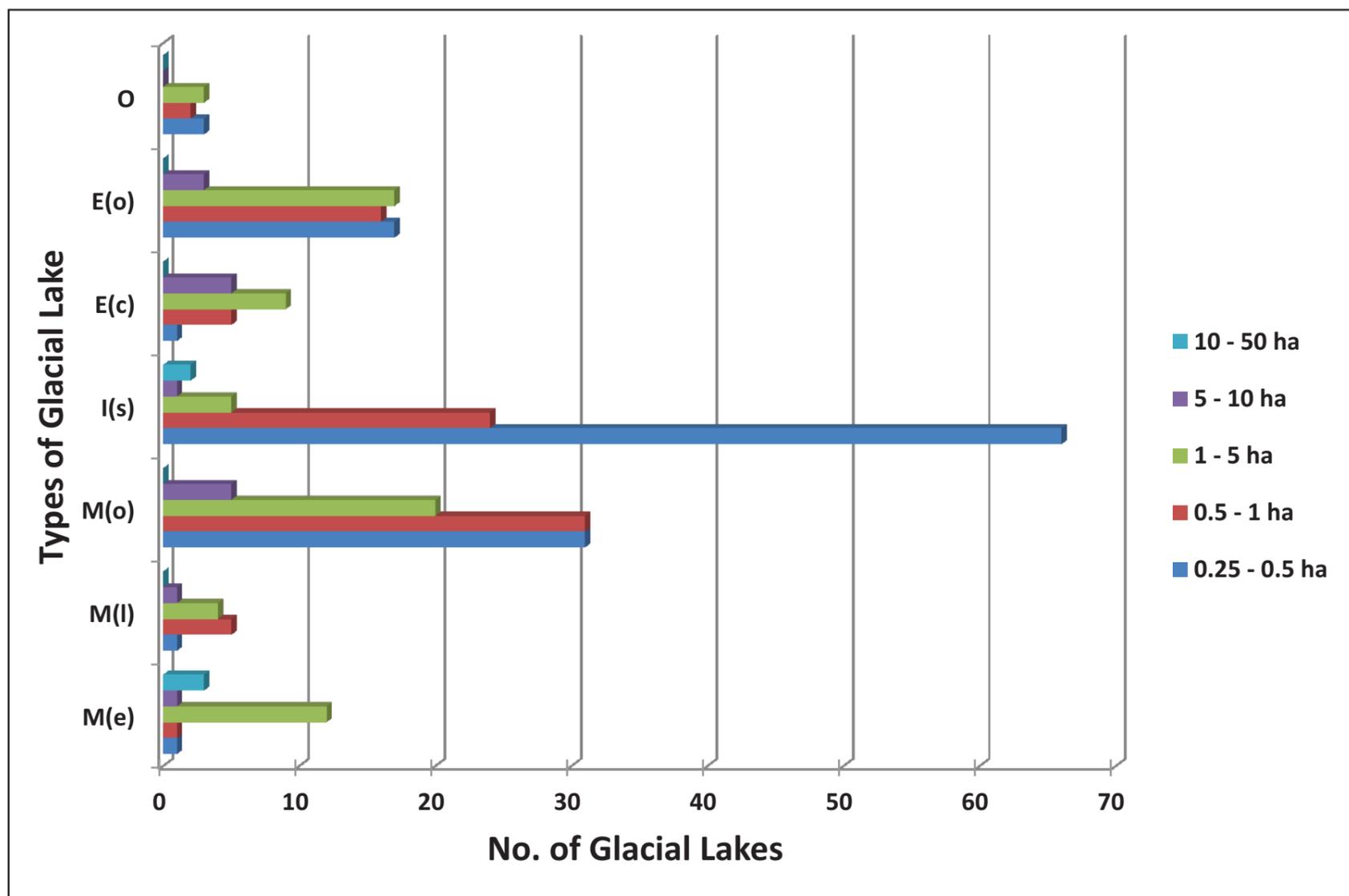
Figure 49: Area range-wise vs. Type-wise distribution of GL in Upper Ganga subbasin

Elevation range-wise Distribution

Elevation range-wise distribution of the glacial lakes in the Upper Ganga subbasin has been shown in Table 39 and Figure 50. Majority of glacial lakes are situated above 4,000 m elevation range i.e. 291 (98.64%) with total lake area of 444.58 ha (99.40%) and remaining 1.36% glacial lakes are below 4,001 m elevation.

Table 39: Elevation range-wise distribution of GL in Upper Ganga subbasin

S. No.	Elevation Range (m)	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	up to 3,000	0	0.00	0.00
2	3,001 - 4,000	4	2.68	0.60
3	4,001 - 5,000	148	263.09	58.82
4	> 5,000	143	181.49	40.58
	Total	**295**	**447.26**	**100.00**
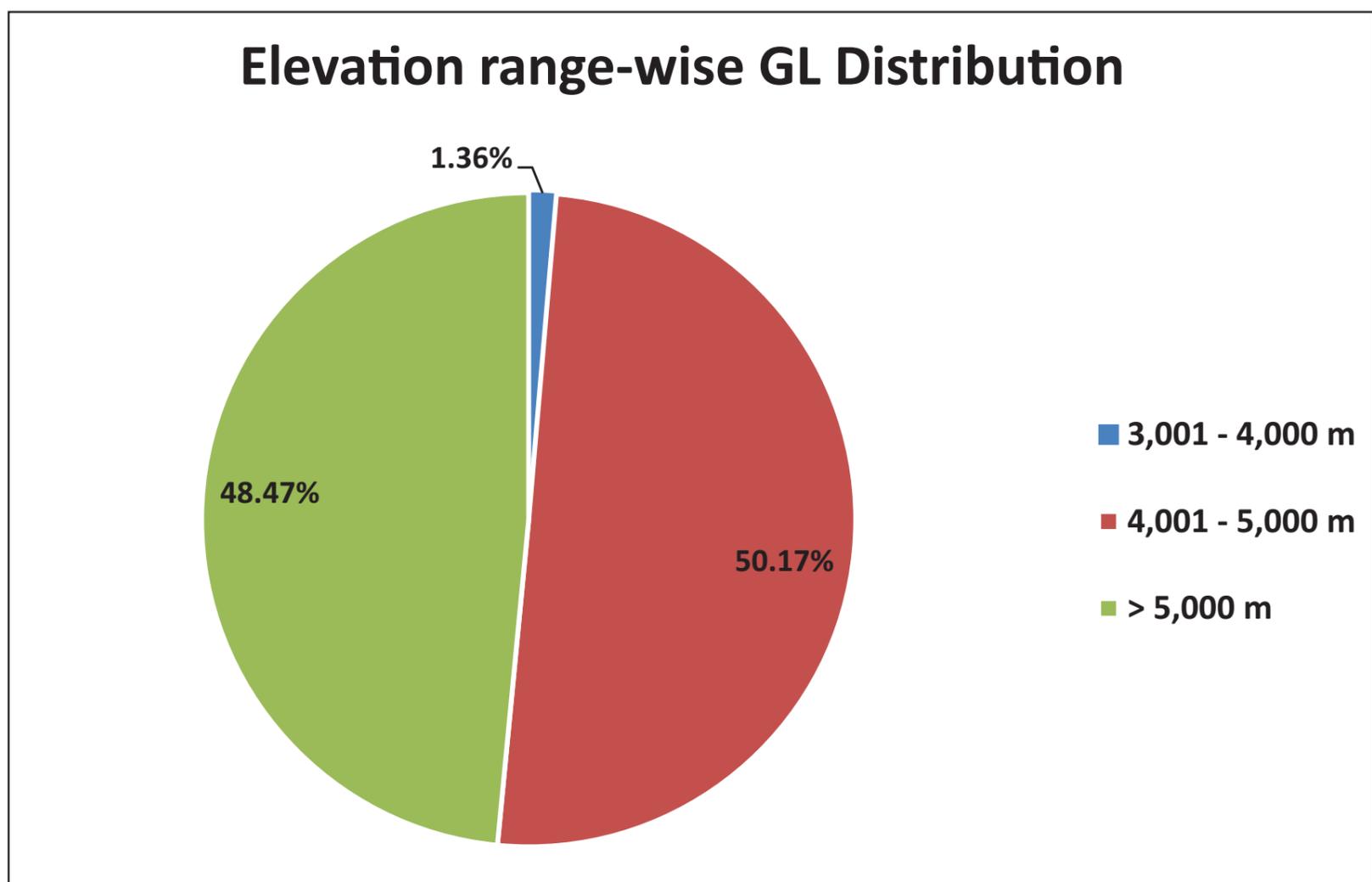
Figure 50: Elevation range-wise distribution of GL in Upper Ganga subbasin

Area-Elevation range-wise Distribution

Glacial lake distribution has been analyzed as per area range vs. elevation range-wise, given in Table 40 and Figure 51. It is noted that, 50.17% of glacial lakes (148) are situated in high altitude range i.e. 4,001 - 5,000 m amsl, which also constitutes maximum total lake area within that range i.e. 58.82%. However, 143 glacial lakes lies above 5,000 m, has majority of its lakes are < 5 ha i.e. 97.20%. Maximum lakes lying in high altitude range is of size ranging 0.25 - 0.5 ha (i.e. 65), followed by lakes of size 0.5 - 1 ha (i.e. 40). It has been further noticed that, 11.48% of lakes ≥ 5 ha are lying within in high altitude range i.e. 4,001 - 5,000 m, majority of them falling in size ranging of 5 - 10 ha.

Table 40: Area range-wise vs. Elevation range-wise distribution of GL in Upper Ganga subbasin

| S. No. | Lake Area Range (ha) | Elevation Range (m) | | | | | | | | Total | |
| | | up to 3,000 | | 3,001 - 4,000 | | 4,001 - 5,000 | | > 5,000 | | | |
		No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Lake Area (ha)
1	0.25 - 0.5	0	0.00	2	0.83	65	22.49	53	17.69	120	41.02
2	0.5 - 1	0	0.00	1	0.74	40	27.88	43	30.52	84	59.14
3	1 - 5	0	0.00	1	1.11	26	54.19	43	97.65	70	152.95
4	5 - 10	0	0.00	0	0.00	13	88.47	3	18.60	16	107.08
5	10 - 50	0	0.00	0	0.00	4	70.06	1	17.02	5	87.07
6	≥ 50	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Total	**0**	**0.00**	**4**	**2.68**	**148**	**263.09**	**143**	**181.49**	**295**	**447.26**
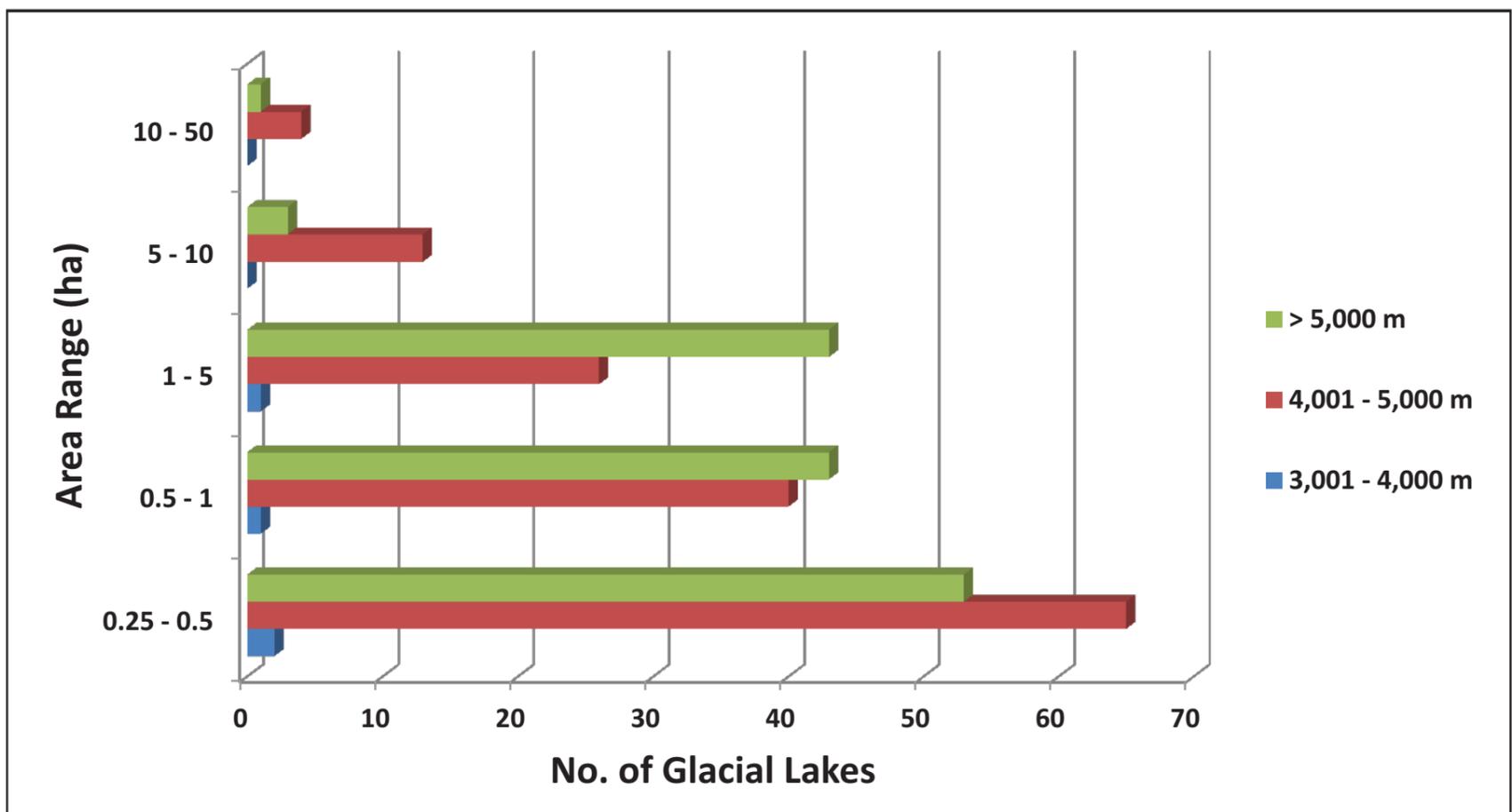
Figure 51: Area range-wise vs. Elevation range-wise distribution of GL in Upper Ganga subbasin

Type-Elevation range-wise Distribution

Glacial lake distribution has also been analyzed as per type-wise vs. elevation range-wise, given in Table 41 and Figure 52. The dominant lake types in the subbasin i.e. Supra-glacial lake (33.22%) is predominantly located in the elevation range of 4,001 - 5,000 m (81.63%). The other dominant lake type, namely, Other Moraine Dammed and Other Glacial Erosion lakes are distributed predominantly in > 5,000 m and 4,001 - 5,000 m elevation range i.e. 81.61% and 56.60% respectively. All types of Moraine-dammed lakes, lie above 4,000 m elevation. Elevation range-type-wise spatial distribution of glacial lakes has been represented in Figure 53.

Table 41: Type-wise vs. Elevation range-wise distribution of GL in Upper Ganga subbasin

| S. No.	Elevation Range (m)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	up to 3,000	0	0	0	0	0	0	0	0	0	0
2	3,001 - 4,000	0	0	0	0	0	0	0	1	3	4
3	4,001 - 5,000	3	7	0	16	80	0	11	30	1	148
4	> 5,000	15	4	0	71	18	0	9	22	4	143
	Total	18	11	0	87	98	0	20	53	8	295
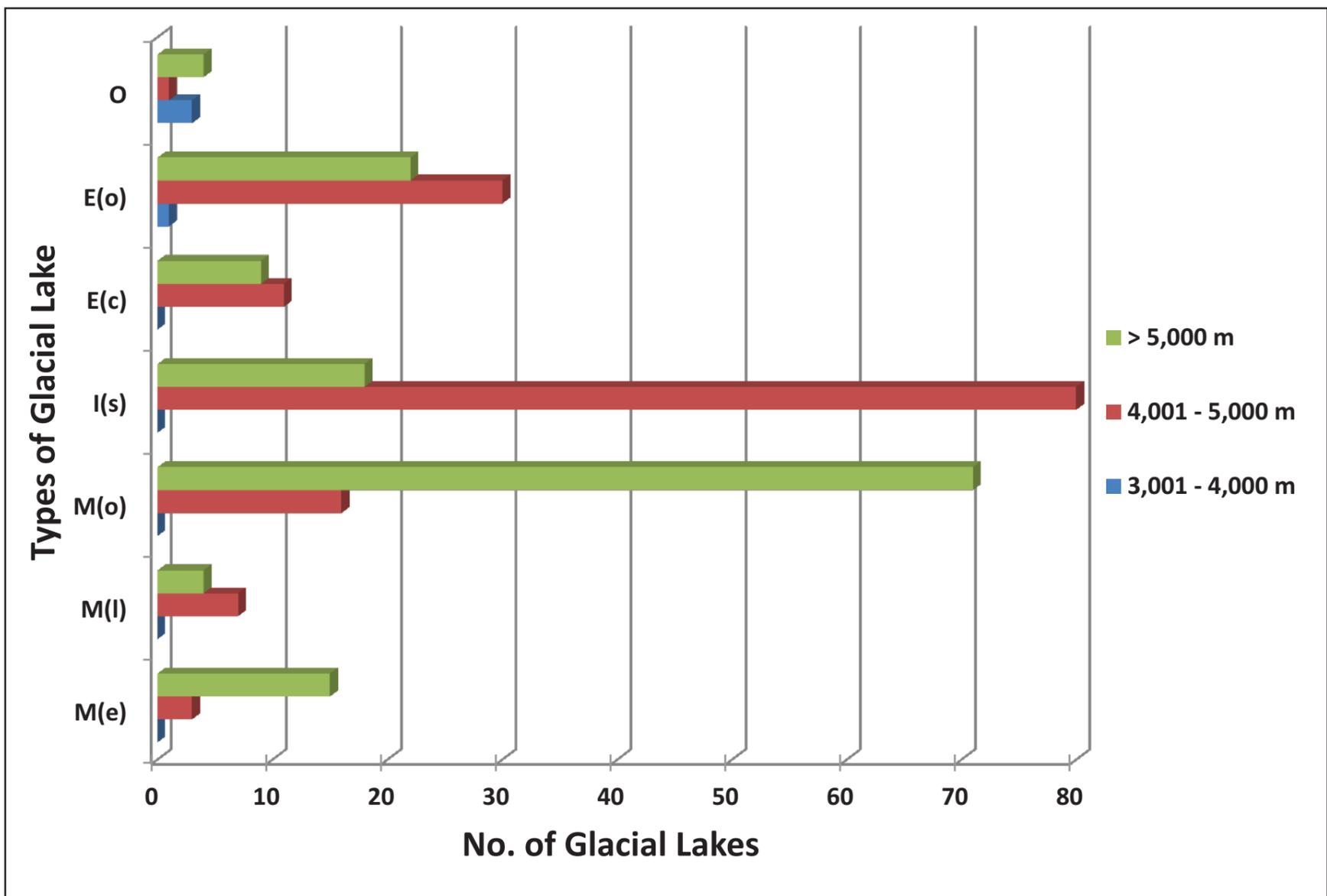
Figure 52: Type-wise vs. Elevation range-wise distribution of GL in Upper Ganga subbasin
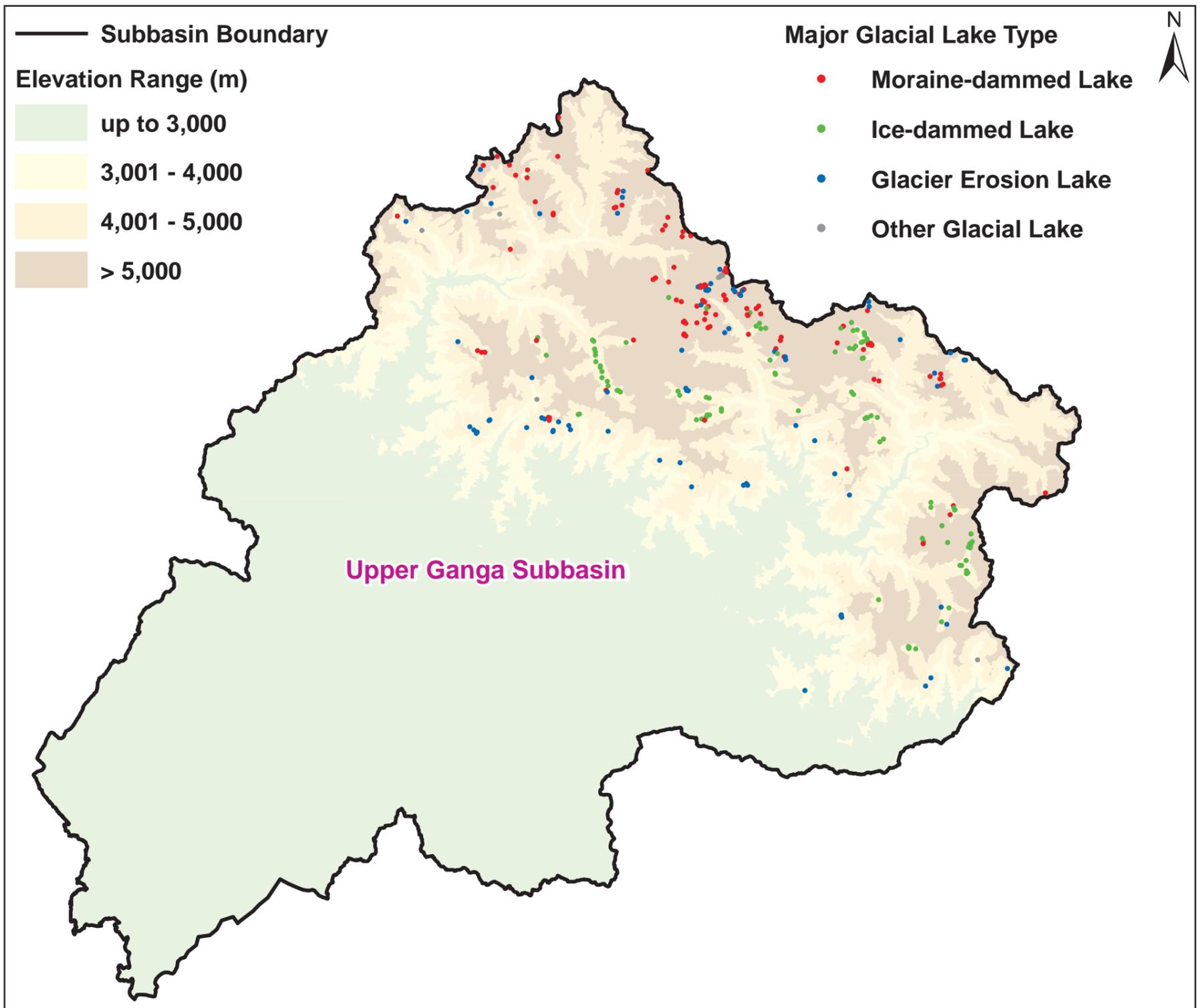
Figure 53: Elevation range-Type-wise spatial distribution of GL in Upper Ganga subbasin

5.2.6 Yamuna Subbasin

The Yamuna subbasin is the sixth largest subbasin of the Ganga River basin covering a total area of 11,701 Km² i.e. 4.73% of the total basin area (Figure 54). It is the largest tributary of Ganga River and drains the western most part of Ganga River basin. Tons and Giri rivers are the major tributaries of Yamuna River. The Tons River rises in the higher elevation beyond the valley of Har-ki-dun in Uttarakhand, and has Pabbar River as one of its tributary. The Giri River originates in Himachal Pradesh and drains the south-eastern corner of the state. A total of 36 glacial lakes has been mapped, covering a total area of 65.45 ha i.e. 0.01% of the total area of the subbasin.
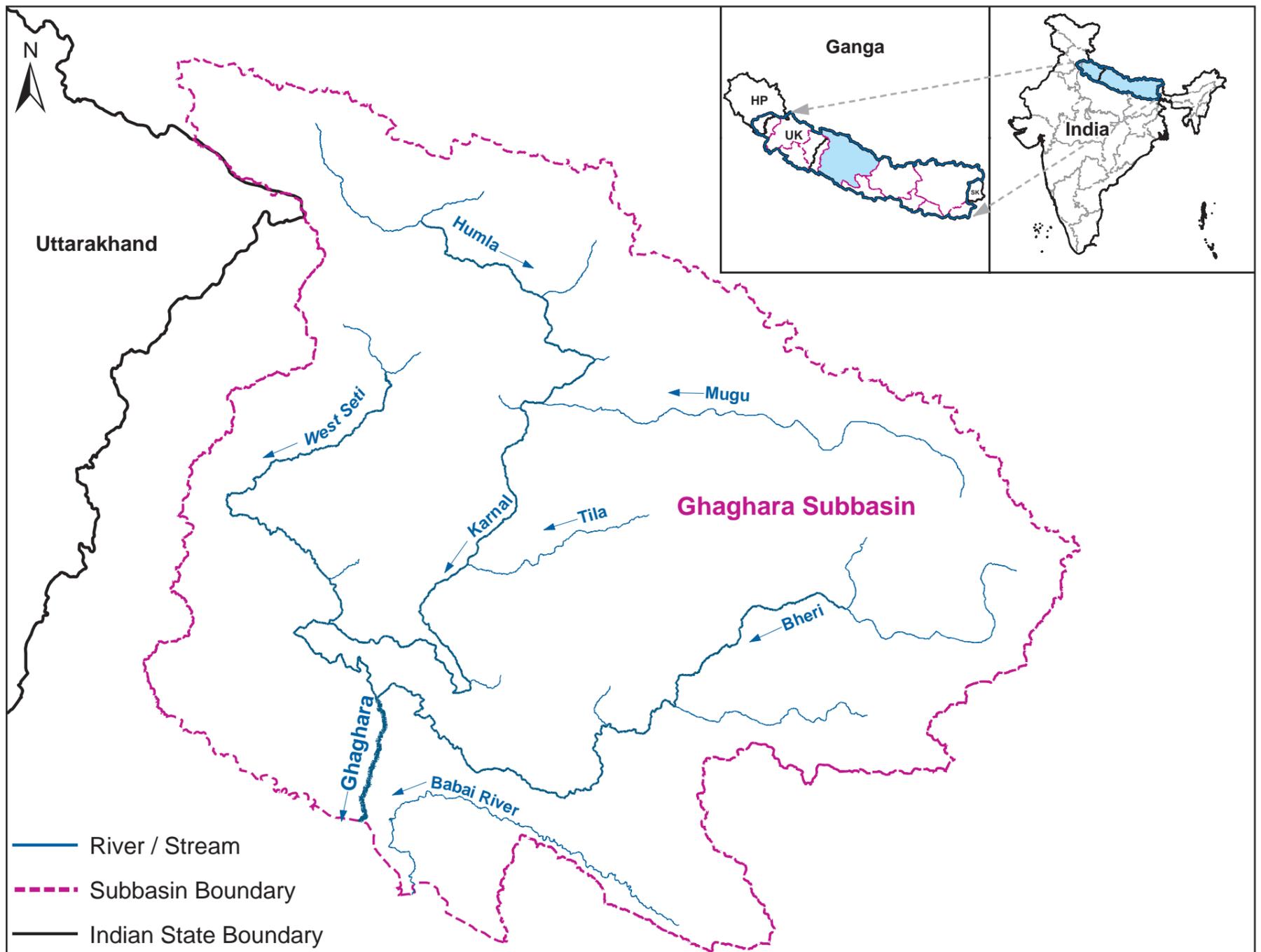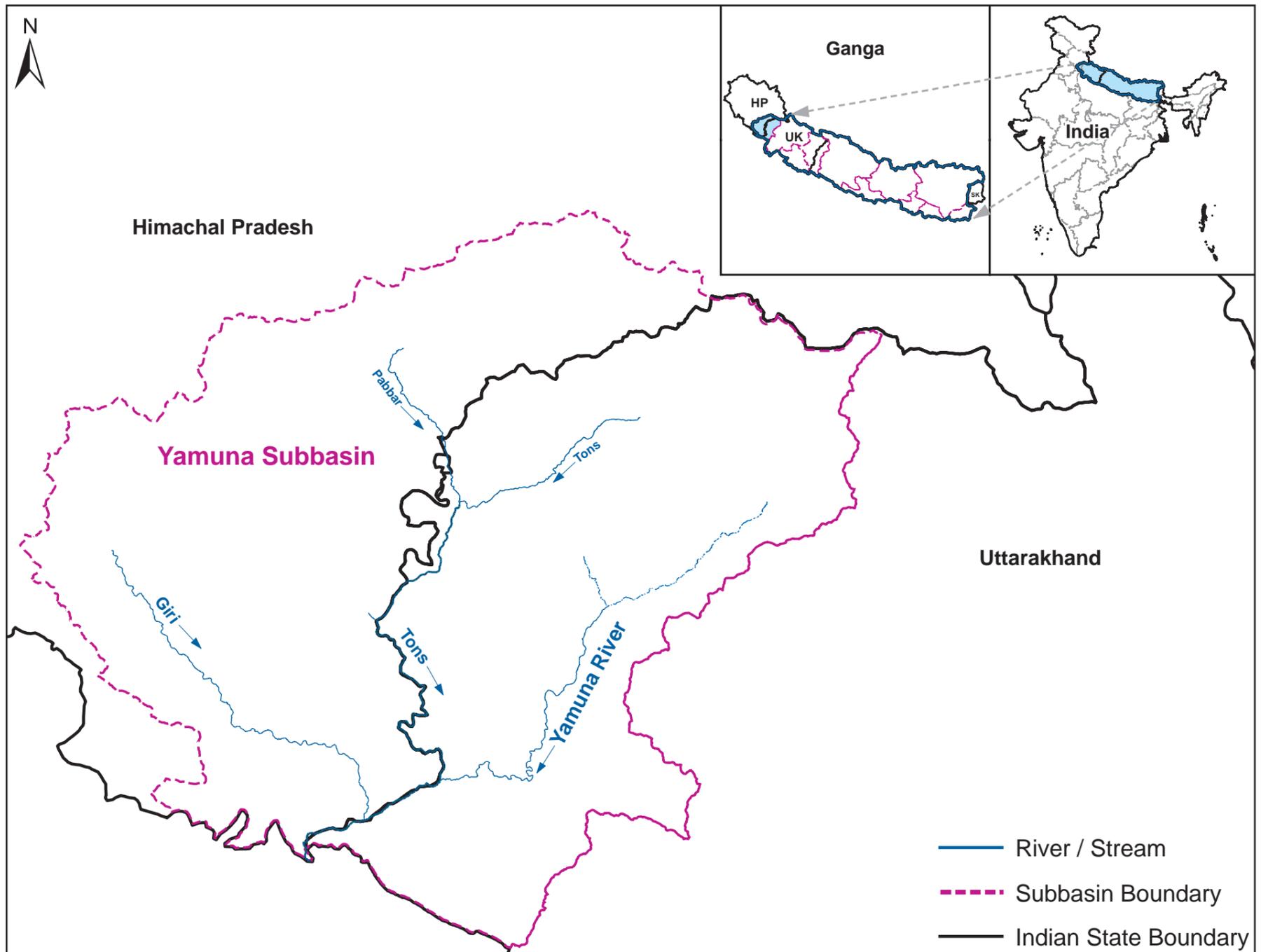

Figure 54: Location map of the Yamuna subbasin

Area range-wise Distribution

In Yamuna subbasin, glacial lakes have been distributed in 5 classes of area ranges except ≥ 50 ha area range. Table 42 and Figure 55 shows the area range-wise distribution of glacial lakes for the Yamuna subbasin. About 33 (91.67%) lakes are with < 5 ha lake area contributing to 48.00% of total lake area. The remaining lakes with ≥ 5 ha in size are only 3 (8.33%) contributing to 52.00% of total lake area in the subbasin.

Table 42: Area range-wise distribution of GL in Yamuna subbasin

| S. No.	Lake Area Range (ha)	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	0.25 - 0.5	14	4.74	7.24
2	0.5 - 1	11	8.28	12.65
3	1 - 5	8	18.40	28.11
4	5 - 10	1	8.26	12.63
5	10 - 50	2	25.77	39.37
6	≥ 50	0	0.00	0.00
	Total	**36**	**65.45**	**100.00**
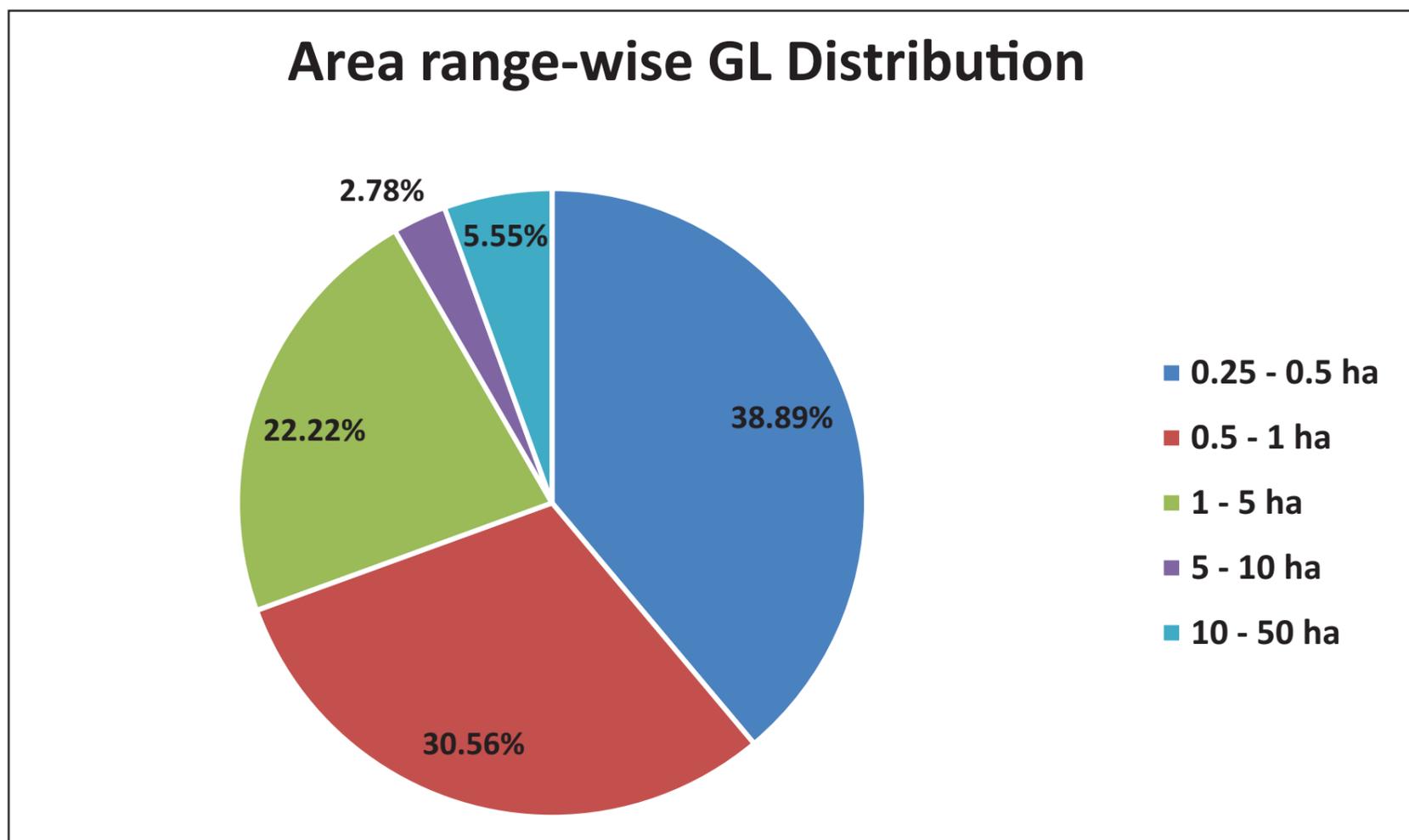
Figure 55: Area range-wise distribution of GL in Yamuna subbasin

Type-wise Distribution

Distribution of different types of glacial lake in the Yamuna subbasin is given in Table 43 and Figure 56. Out of 9 types of glacial lake, only 6 types of lake are present in the Yamuna subbasin, where Other Glacial Erosion lake is found to be the maximum with 18 (50.00%) occupying a total lake extent of 30.47 ha at 46.55% in the subbasin. After that, Other Moraine Dammed lakes are in majority with 6 (16.67%) and extend over a total area of 3.63 ha 5.54%. in the subbasin.

Table 43: Type-wise distribution of GL in Yamuna subbasin

| S. No.	Code	Types of Glacial Lake	No. of Lakes	Total Lake Area (ha)	Total Lake Area (%)
1	M(e)	End-moraine Dammed Lake	1	1.26	1.93
2	M(l)	Lateral Moraine Dammed Lake	0	0.00	0.00
3	M(lg)	Lateral Moraine Dammed Lake with Ice	0	0.00	0.00
4	M(o)	Other Moraine Dammed Lake	6	3.63	5.54
5	I(s)	Supra-glacial Lake	4	1.32	2.02
6	I(d)	Glacier Ice-dammed Lake	0	0.00	0.00
7	E(c)	Cirque Erosion Lake	3	26.74	40.85
8	E(o)	Other Glacial Erosion Lake	18	30.47	46.55
9	O	Other Glacial Lake	4	2.04	3.11
		Total	**36**	**65.45**	**100.00**
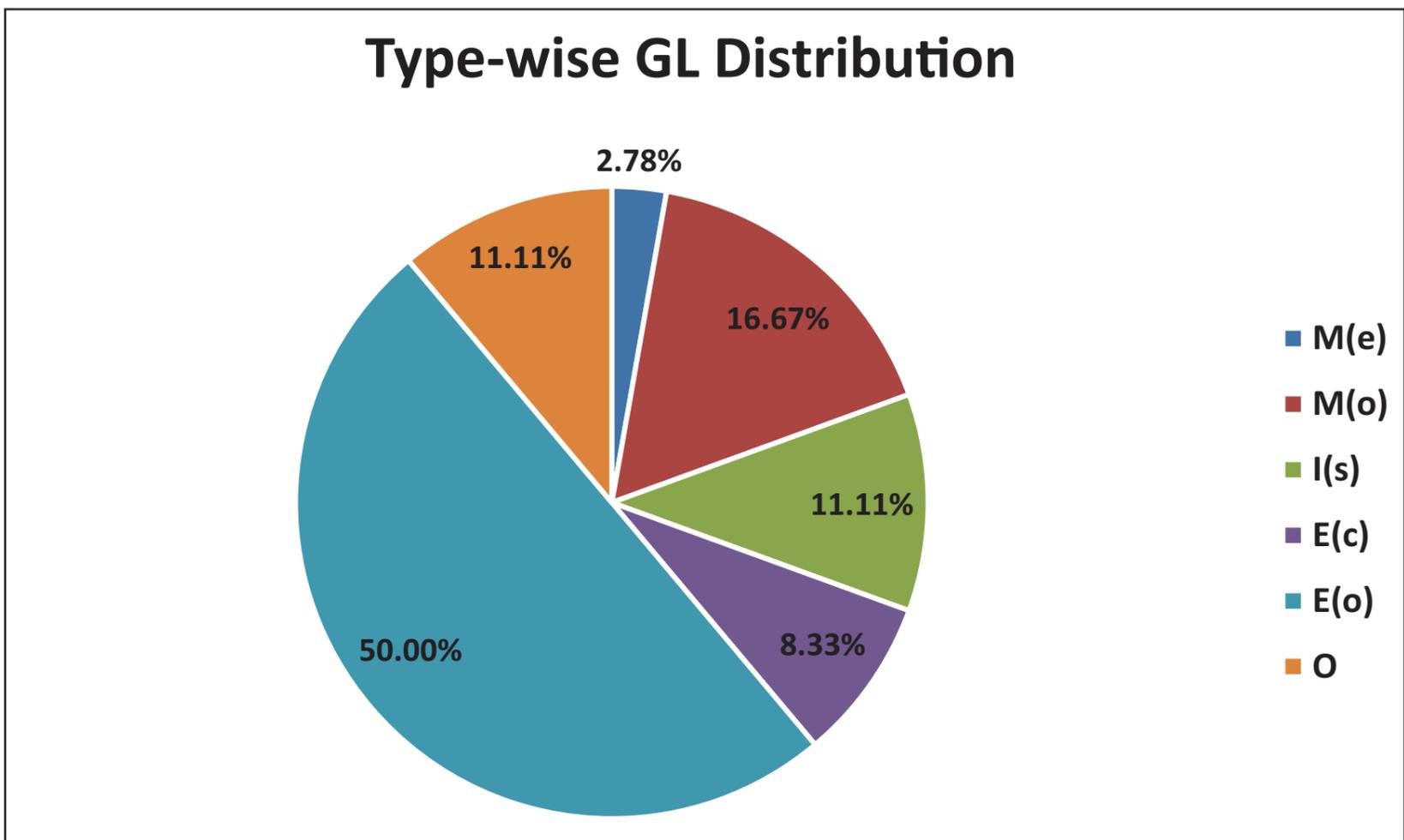
Figure 56: Type-wise distribution of GL in Yamuna subbasin

Area range-Type-wise Distribution

Glacial lake distribution by area range vs. type-wise is given in Table 44 and Figure 57. The lakes with < 5 ha in size (91.67%) are dominant with Other Glacial Erosion (51.52%) and Other Moraine Dammed lakes (18.18%). Lakes with ≥ 5 ha (8.33%) are also dominated by Cirque Erosion type (66.67%). All types of Glacier Erosion lakes, which constitute about 58.33% are predominantly with < 5 ha in water spread.

Table 44: Area range-wise vs. Type-wise distribution of GL in Yamuna subbasin

| S. No.	Lake Area Range (ha)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	0.25 - 0.5	0	0	0	2	4	0	0	6	2	14
2	0.5 - 1	0	0	0	4	0	0	0	5	2	11
3	1 - 5	1	0	0	0	0	0	1	6	0	8
4	5 - 10	0	0	0	0	0	0	1	0	0	1
5	10 - 50	0	0	0	0	0	0	1	1	0	2
6	≥ 50	0	0	0	0	0	0	0	0	0	0
	Total	1	0	0	6	4	0	3	18	4	36
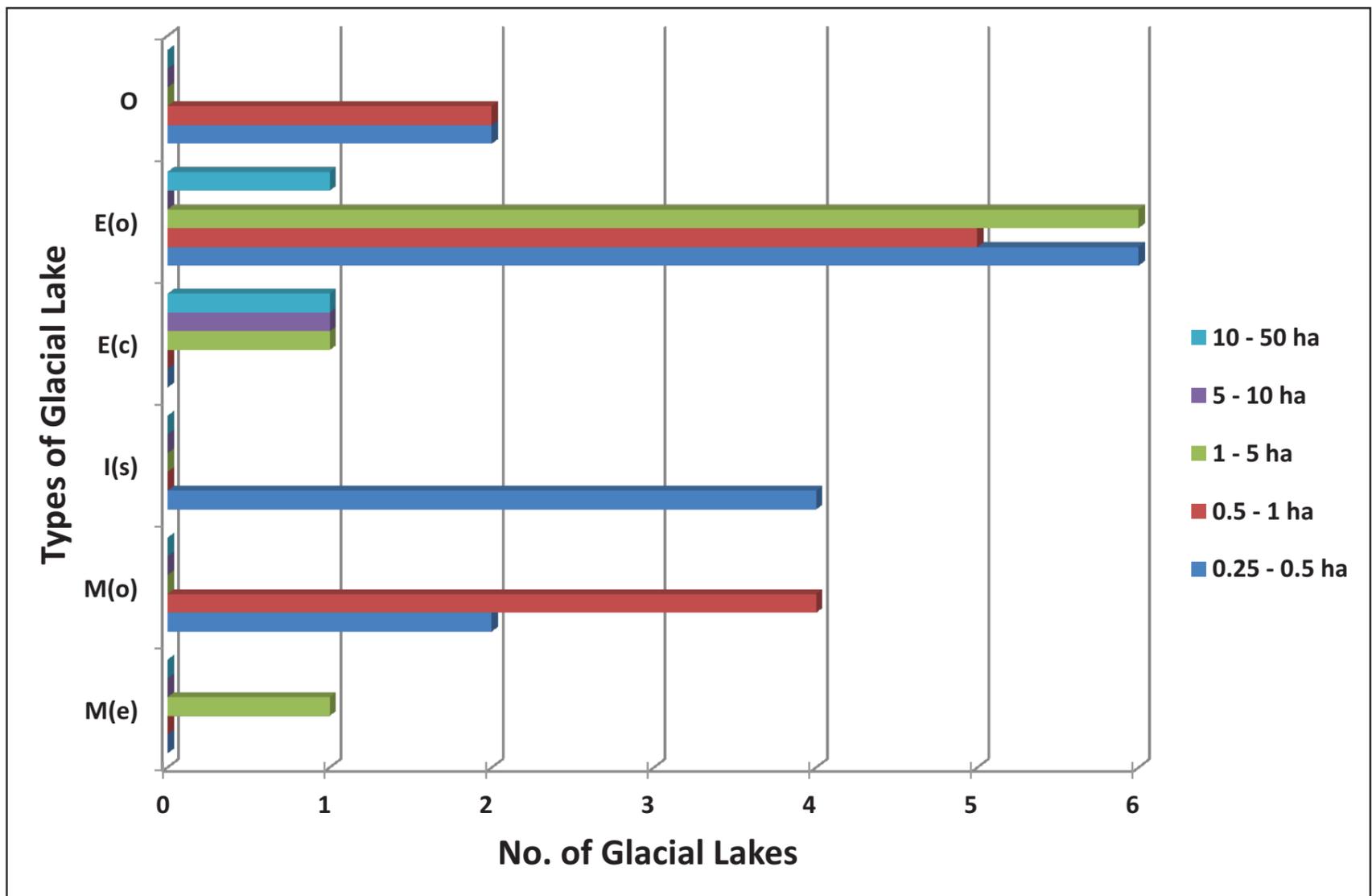
Figure 57: Area range-wise vs. Type-wise distribution of GL in Yamuna subbasin

Elevation range-wise Distribution

Elevation range-wise distribution of the glacial lakes in the Yamuna subbasin has been shown in Table 45 and Figure 58. Majority of glacial lakes are situated above 4,000 m elevation range i.e. 32 (88.89%) with total lake area of 63.41 ha (96.89%) and remaining 11.11% glacial lakes are below 4,001 m elevation.

Table 45: Elevation range-wise distribution of GL in Yamuna subbasin

S. No.	Elevation Range (m)	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	up to 3,000	0	0.00	0.00
2	3,001 - 4,000	4	2.04	3.11
3	4,001 - 5,000	32	63.41	96.89
4	> 5,000	0	0.00	0.00
	Total	**36**	**65.45**	**100.00**

Elevation range-wise GL Distribution

11.11%

88.89%

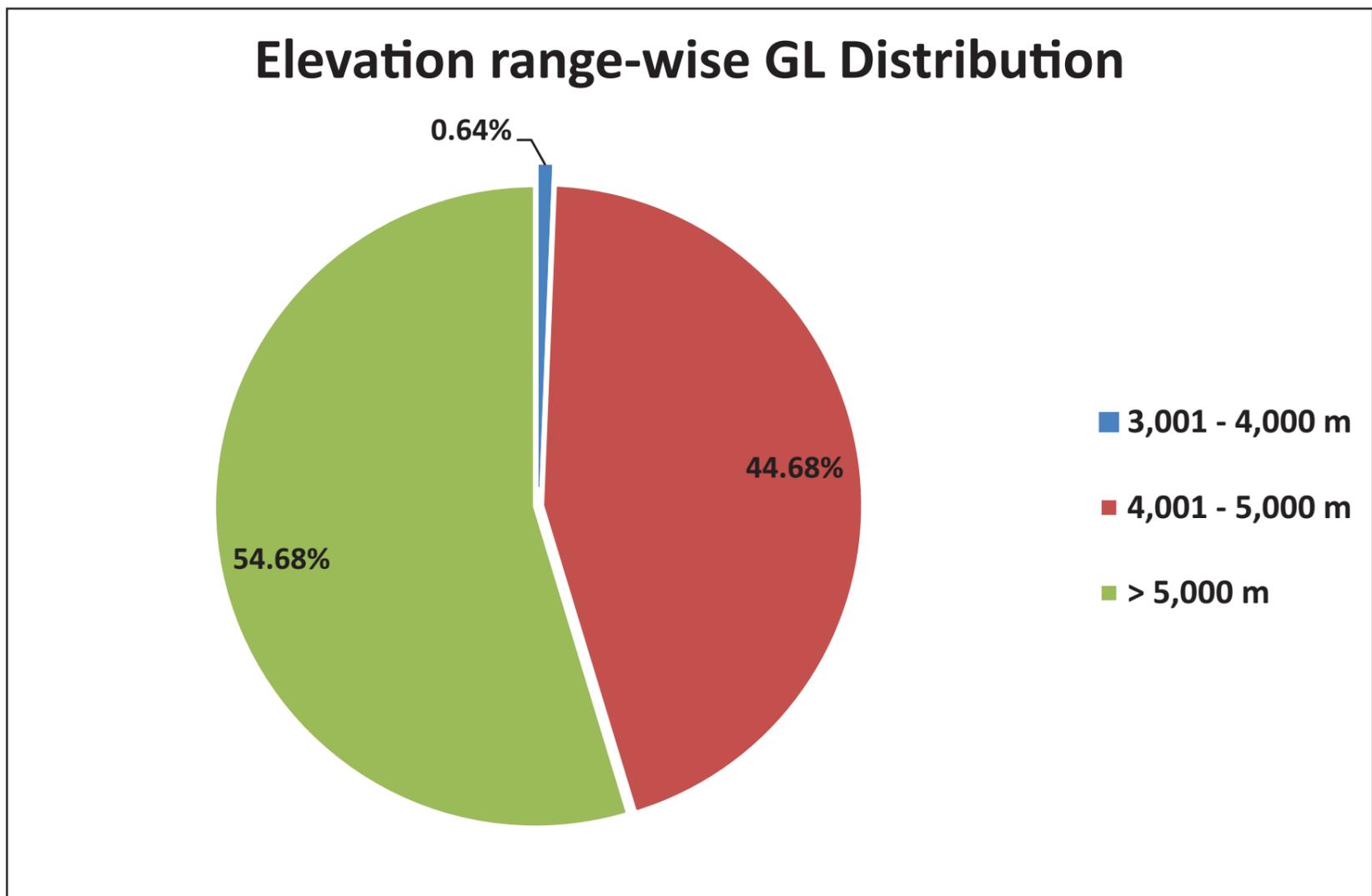■ 3,001 - 4,000 m

■ 4,001 - 5,000 m
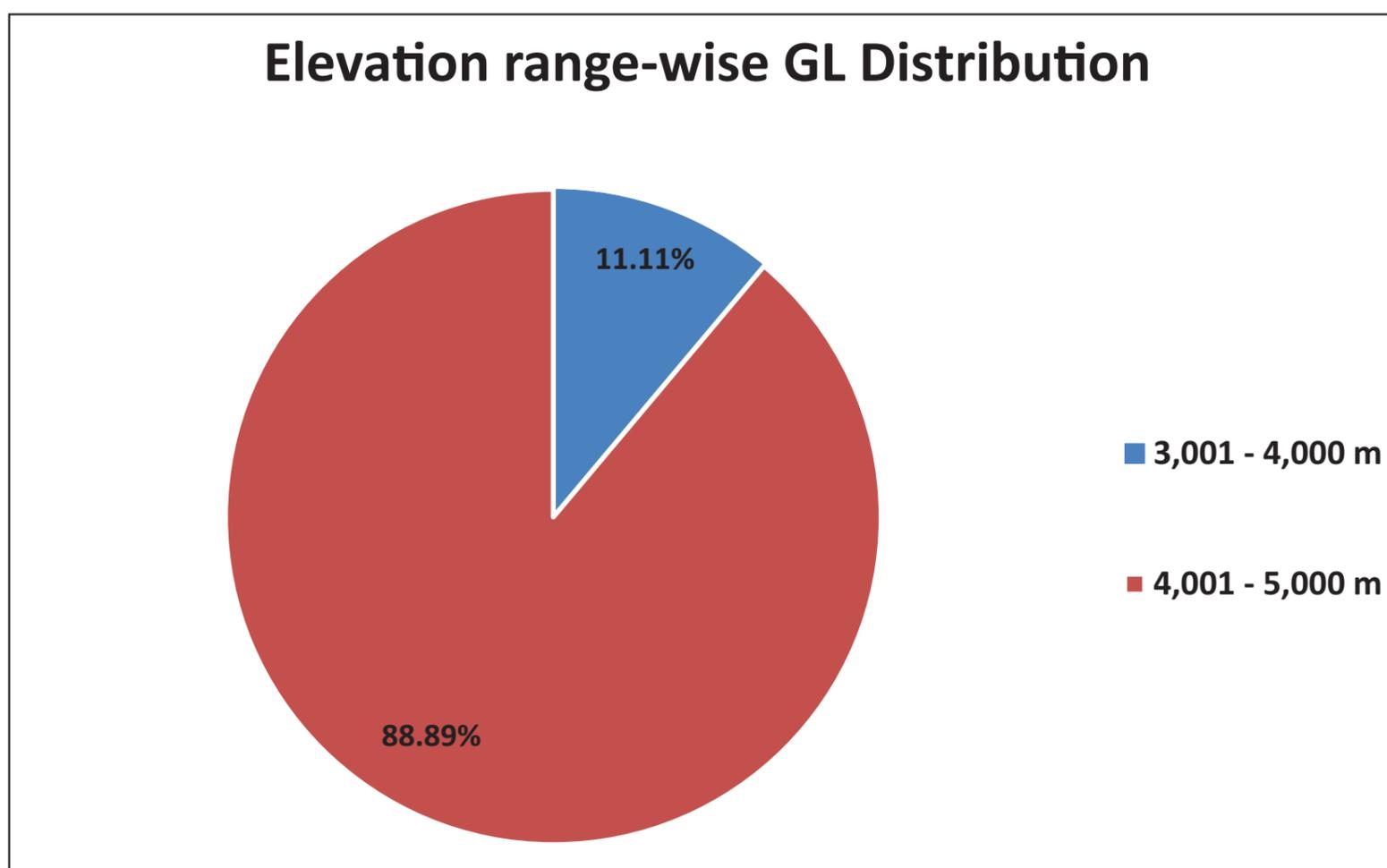
Figure 58: Elevation range-wise distribution of GL in Yamuna subbasin

Area-Elevation range-wise Distribution

Glacial lake distribution has been analyzed as per area range vs. elevation range-wise, given in Table 46 and Figure 59. It is noted that, 88.89% of glacial lakes (32) are situated in high altitude range i.e. 4,001 - 5,000 m amsl, which constitutes maximum share of total lake area within that range i.e. 96.89%. It has been further noticed that, 9.38% of lakes ≥ 5 ha are lying within high altitude range i.e. 4,001 - 5,000 m, majority of them falling in size range of 10 - 50 ha. However, no glacial lakes lie up to 3,000 m and above 5,000 m elevation range. All lakes lying in medium altitude range are < 5 ha, distributed equally in size ranges 0.25 - 0.5 ha and 0.5 - 1 ha (i.e. 2 each).

Table 46: Area range-wise vs. Elevation range-wise distribution of GL in Yamuna subbasin

| S. No.	Lake Area Range (ha)	up to 3,000		3,001 - 4,000		4,001 - 5,000		> 5,000		Total	
		No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Lake Area (ha)
1	0.25 - 0.5	0	0.00	2	0.64	12	4.10	0	0.00	14	4.74
2	0.5 - 1	0	0.00	2	1.40	9	6.88	0	0.00	11	8.28
3	1 - 5	0	0.00	0	0.00	8	18.40	0	0.00	8	18.40
4	5 - 10	0	0.00	0	0.00	1	8.26	0	0.00	1	8.26
5	10 - 50	0	0.00	0	0.00	2	25.77	0	0.00	2	25.77
6	≥ 50	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Total	**0**	**0.00**	**4**	**2.04**	**32**	**63.41**	**0**	**0.00**	**36**	**65.45**
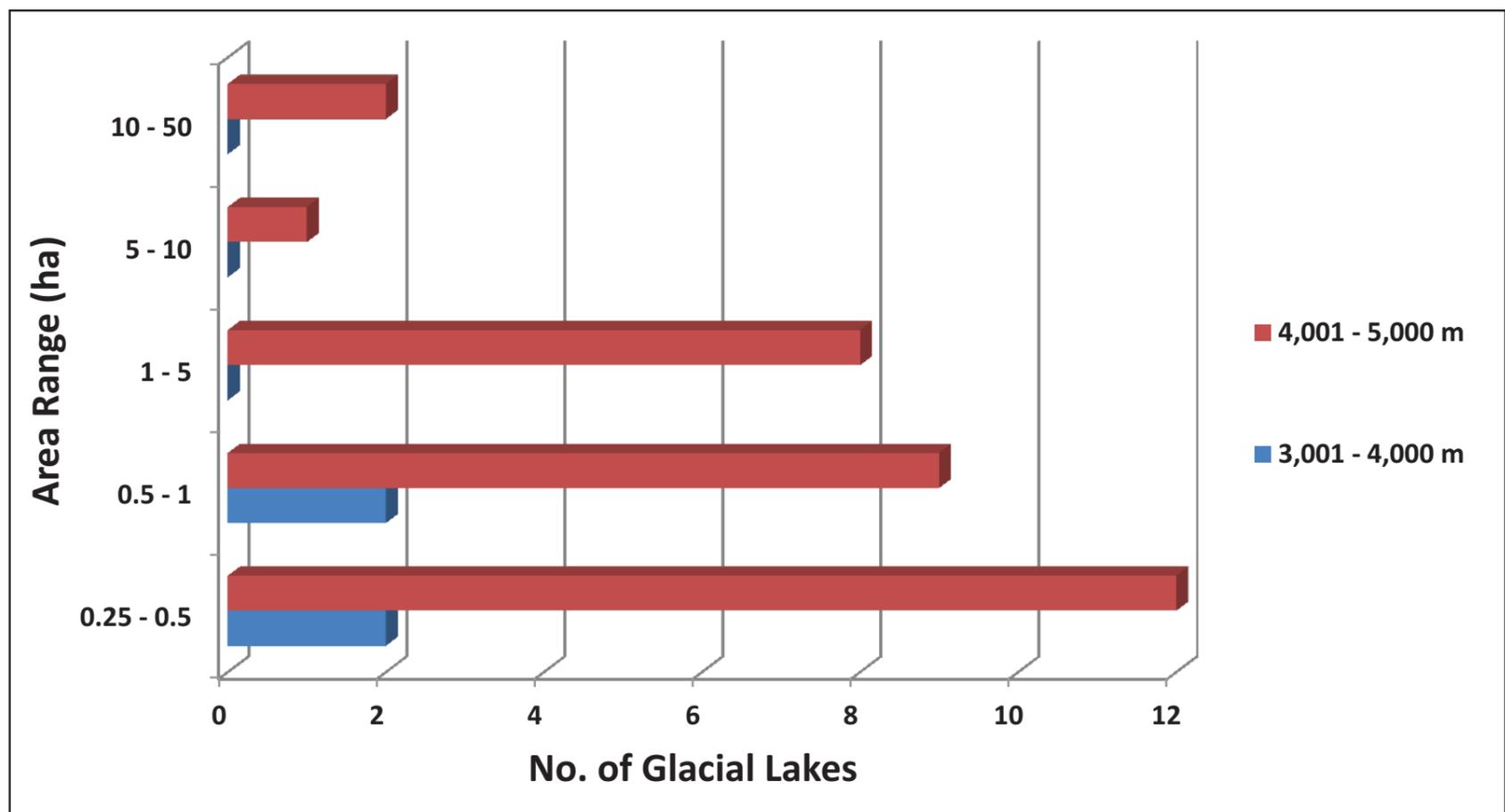
Figure 59: Area range-wise vs. Elevation range-wise distribution of GL in Yamuna subbasin

Type-Elevation range-wise Distribution

Glacial lake distribution has also been analyzed as per type-wise vs. elevation range-wise, given in Table 47 and Figure 60. The dominant lake type in the subbasin i.e. Other Glacial Erosion lake (50.00%) is predominantly located in the elevation range of 4,001 - 5,000 m. The other dominant lake type, namely, Other Moraine Dammed and Supra-glacial lakes are distributed in high altitude range (4,001 - 5,000 m), i.e. 18.75% and 12.50% respectively. Elevation range-type-wise spatial distribution of glacial lakes has been represented in Figure 61.

Table 47: Type-wise vs. Elevation range-wise distribution of GL in Yamuna subbasin

| S. No.	Elevation Range (m)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	up to 3,000	0	0	0	0	0	0	0	0	0	0
2	3,001 - 4,000	0	0	0	0	0	0	0	0	4	4
3	4,001 - 5,000	1	0	0	6	4	0	3	18	0	32
4	> 5,000	0	0	0	0	0	0	0	0	0	0
	Total	**1**	**0**	**0**	**6**	**4**	**0**	**3**	**18**	**4**	**36**
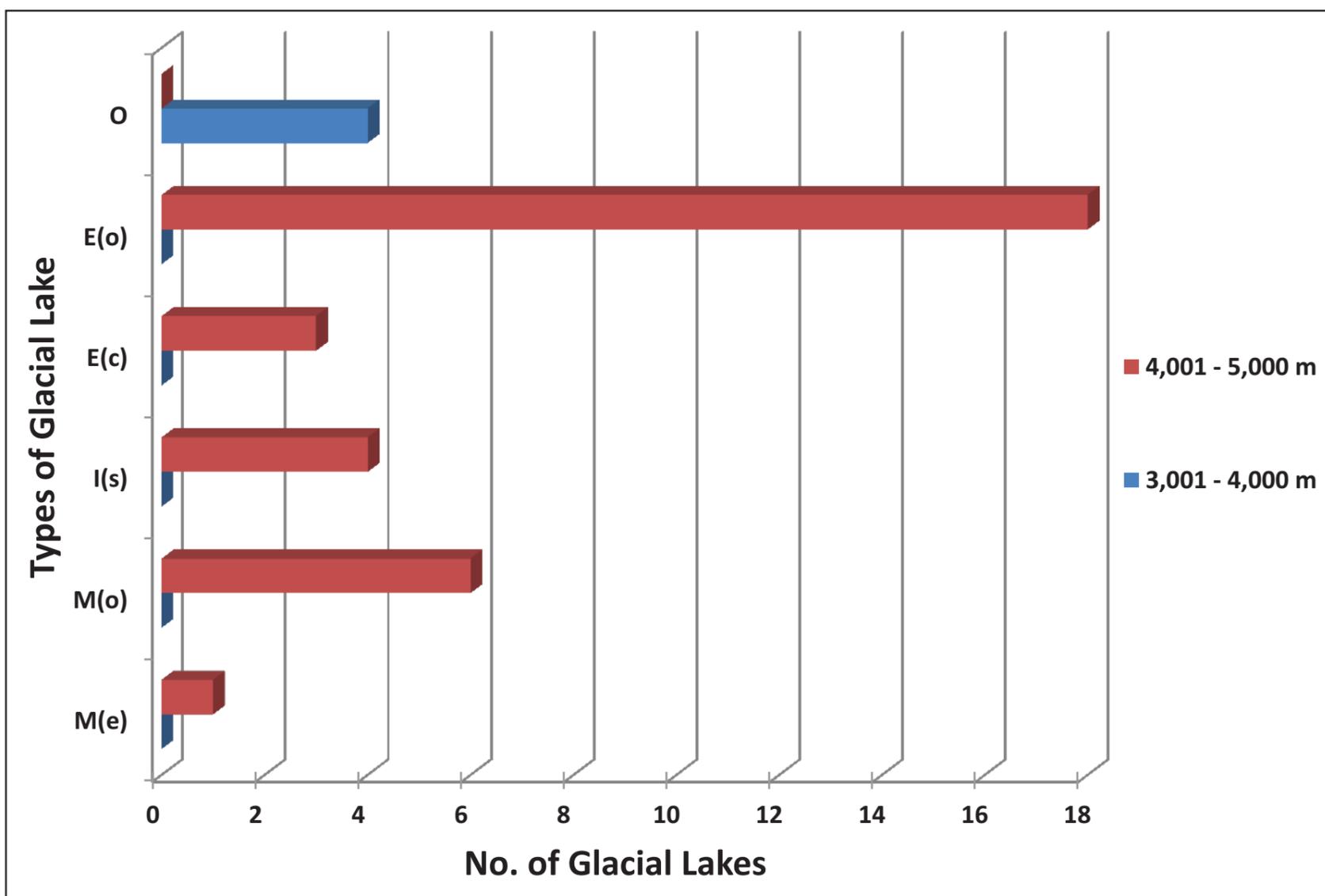
Figure 60: Type-wise vs. Elevation range-wise distribution of GL in Yamuna subbasin
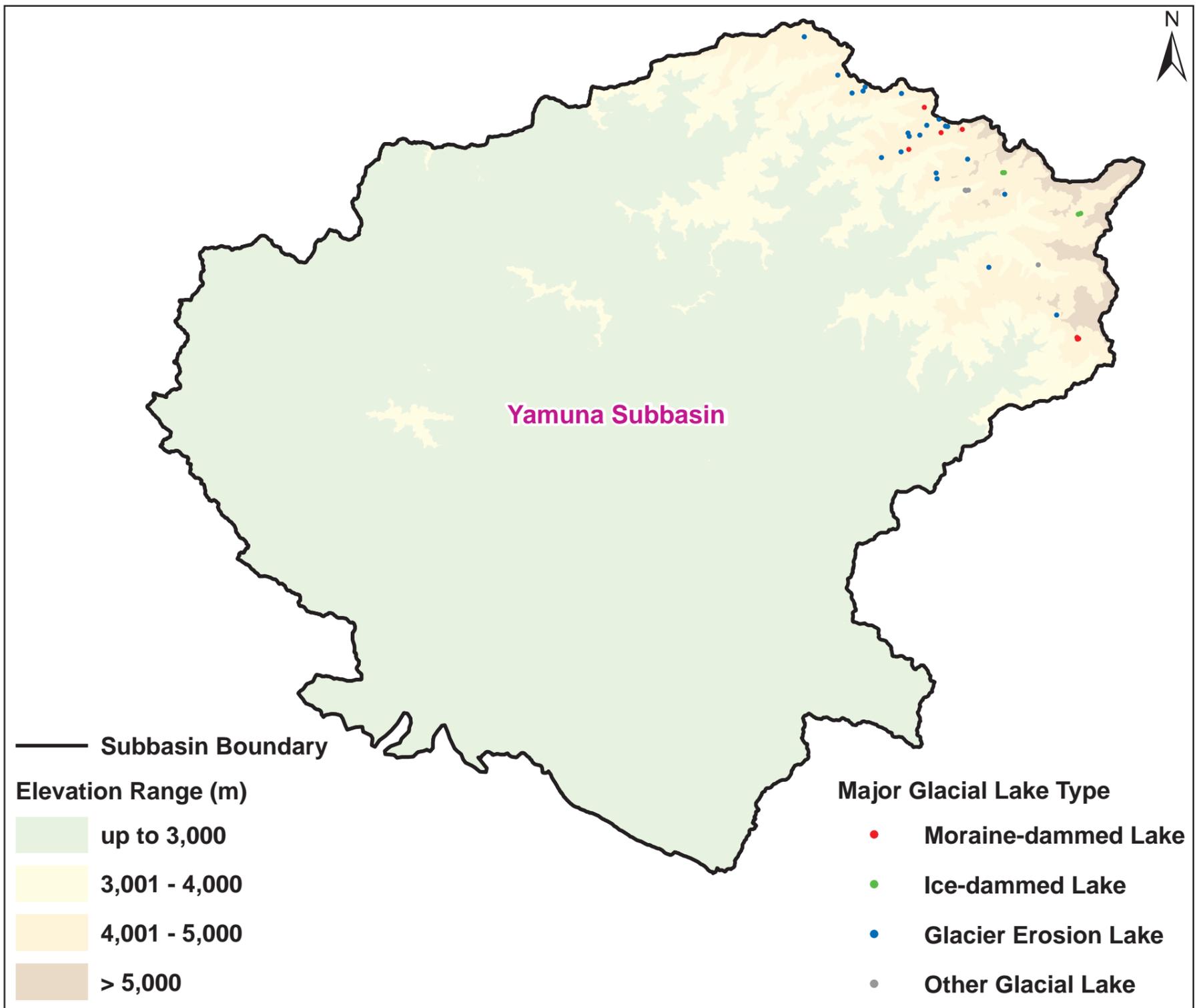
Figure 61: Elevation range-Type-wise spatial distribution of GL in Yamuna subbasin

5.3 Inter Comparison of Subbasins

Glacial lakes in all 6 subbasins of Ganga River basin are compared for number of glacial lakes, total lake area, lake types and their elevation ranges in the following sections.

Subbasin-wise Distribution

Table 48 and Figure 62 shows the subbasin-wise distribution of number of glacial lakes and their water spread area for the Ganga River basin. Lakes are predominantly distributed in Kosi (51.77%) followed by Ghaghara subbasin (26.77%), occupying a total lake extent of 14,604.34 ha and 3,536.39 ha at 70.60% and 17.10% respectively in the entire basin. However, minimum glacial lakes are present in Yamuna subbasin (0.76%) followed by Sarda subbasin (1.17%), covering a total lake extent of 0.32% and 0.57% respectively.

Table 48: Subbasin-wise distribution of GL in Ganga River basin

S. No.	Subbasin	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	Gandak	624	1,912.84	9.25
2	Ghaghara	1,260	3,536.39	17.10
3	Kosi	2,437	14,604.34	70.60
4	Sarda	55	118.84	0.57
5	Upper Ganga	295	447.26	2.16
6	Yamuna	36	65.45	0.32
	Total	**4,707**	**20,685.12**	**100.00**
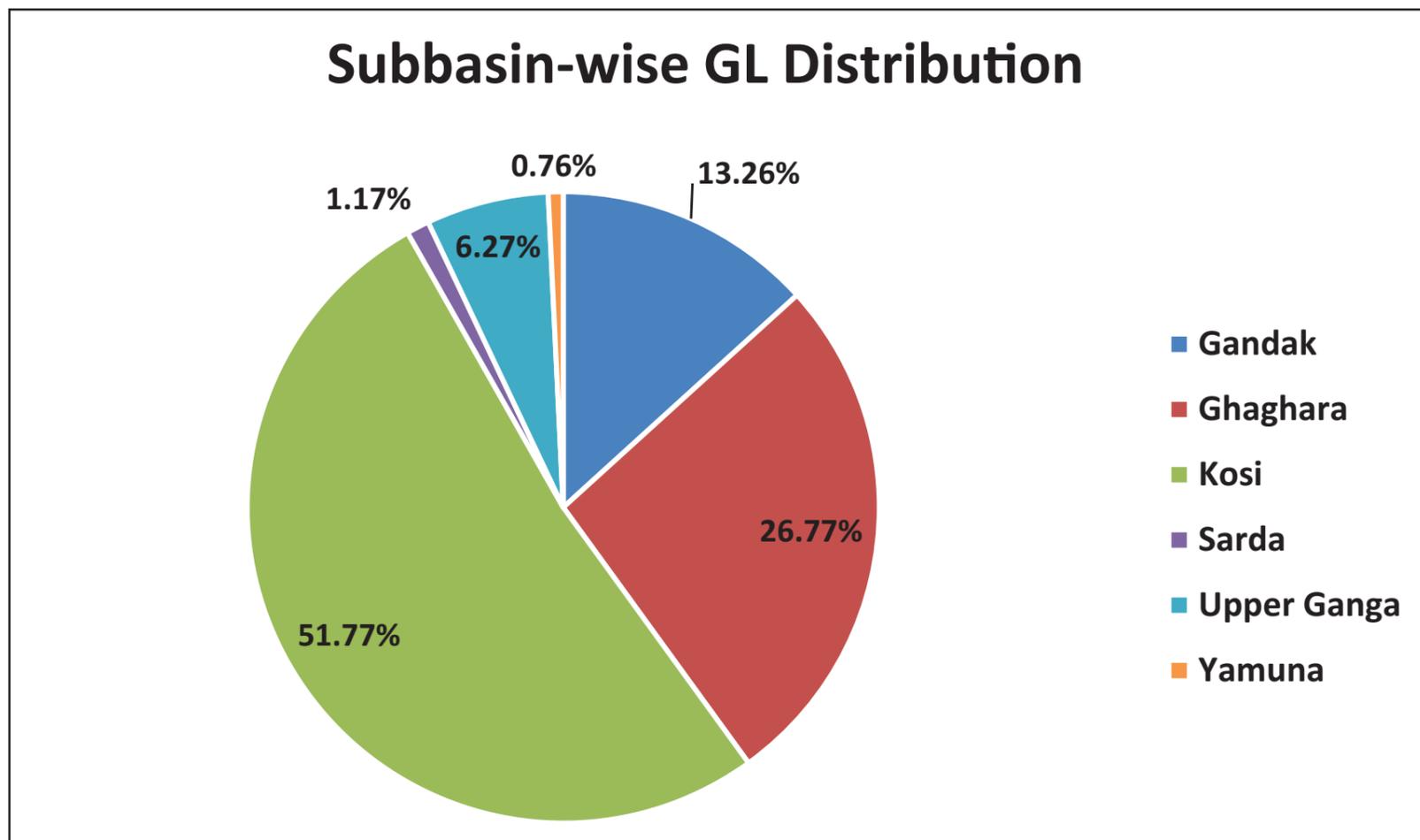
Figure 62: Subbasin-wise distribution of GL in Ganga River basin

Subbasin-Area range-wise Distribution

Glacial lakes have been distributed in all subbasins for all 6 classes of area ranges. Table 49 and Figure 63 shows subbasin-area range-wise distribution of glacial lakes for the Ganga River basin. All subbasins contain glacial lakes in all area ranges except Sarda, Upper Ganga, and Yamuna subbasins, where lakes are not present in the area range of ≥ 50 ha. Kosi is the subbasin which has majority of lakes ≥ 50 ha i.e. 93.10%.

Table 49: Subbasin-wise vs. Area range-wise distribution of GL in Ganga River basin

S. No.	Subbasin	Lake Area Range (ha)											
		0.25 - 0.5		0.5 - 1		1 - 5		5 - 10		10 - 50		≥ 50	
		No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)
1	Gandak	189	66.76	157	109.47	205	435.25	36	242.86	35	628.84	2	429.65
2	Ghaghara	334	118.99	321	232.49	435	945.22	84	594.54	84	1,507.18	2	137.97
3	Kosi	606	215.04	571	406.11	862	1,917.98	174	1,205.76	170	3,650.33	54	7,209.12
4	Sarda	16	5.75	13	8.54	19	39.15	4	26.38	3	39.02	0	0.00
5	Upper Ganga	120	41.01	84	59.14	70	152.95	16	107.08	5	87.07	0	0.00
6	Yamuna	14	4.74	11	8.28	8	18.40	1	8.26	2	25.77	0	0.00
	Total	1,279	452.29	1,157	824.03	1,599	3,508.95	315	2,184.88	299	5,938.21	58	7,776.74
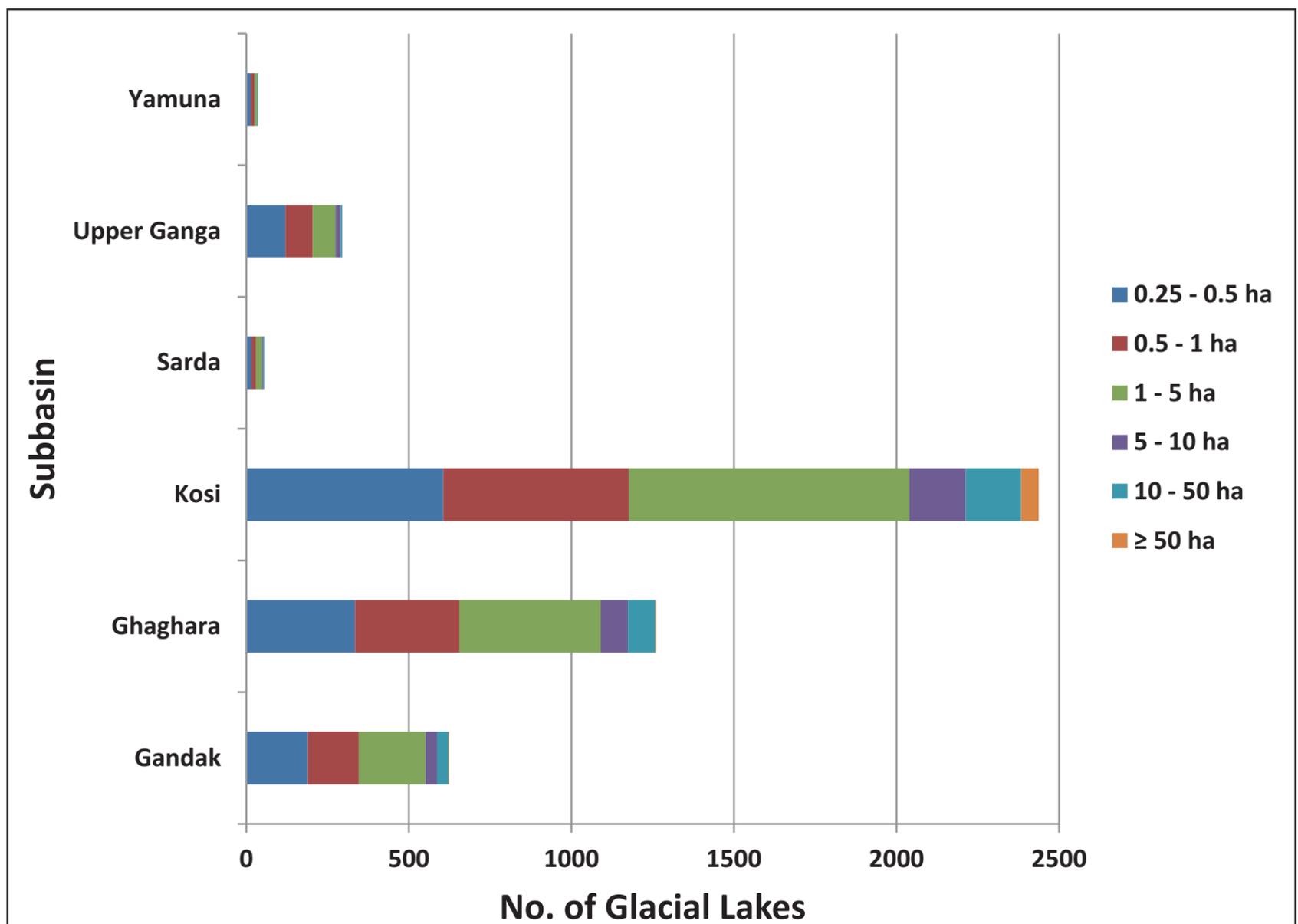
Figure 63: Subbasin-wise vs. Area range-wise distribution of GL in Ganga River basin

Subbasin-Type-wise Distribution

Glacial lake distribution by subbasin vs. type-wise is given in Table 50 and Figure 64. It has been observed that, in descending order of total lake count, 4 types of lakes viz., Other Glacial Erosion, Other Moraine Dammed, Supra-glacial, and End-moraine Dammed lakes are distributed in all subbasins. The dominant lake type i.e. Other Glacial Erosion lake is found predominantly in Kosi (56.54%), Ghaghara (31.48%), Gandak (7.17%), and Upper Ganga (3.04%) respectively. Gandak subbasin consists higher number of Lateral Moraine Dammed lakes (with ice) i.e. 66.67%. Lateral Moraine Dammed lakes are present in all subbasins except Yamuna.

Table 50: Subbasin-wise vs. Type-wise distribution of GL in Ganga River basin

S. No.	Subbasin	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	Gandak	37	18	6	312	101	1	4	125	20	624
2	Ghaghara	61	27	3	485	73	0	27	549	35	1,260
3	Kosi	138	39	0	829	335	0	65	986	45	2,437
4	Sarda	5	5	0	21	6	0	4	13	1	55
5	Upper Ganga	18	11	0	87	98	0	20	53	8	295
6	Yamuna	1	0	0	6	4	0	3	18	4	36
	Total	260	100	9	1,740	617	1	123	1,744	113	4,707
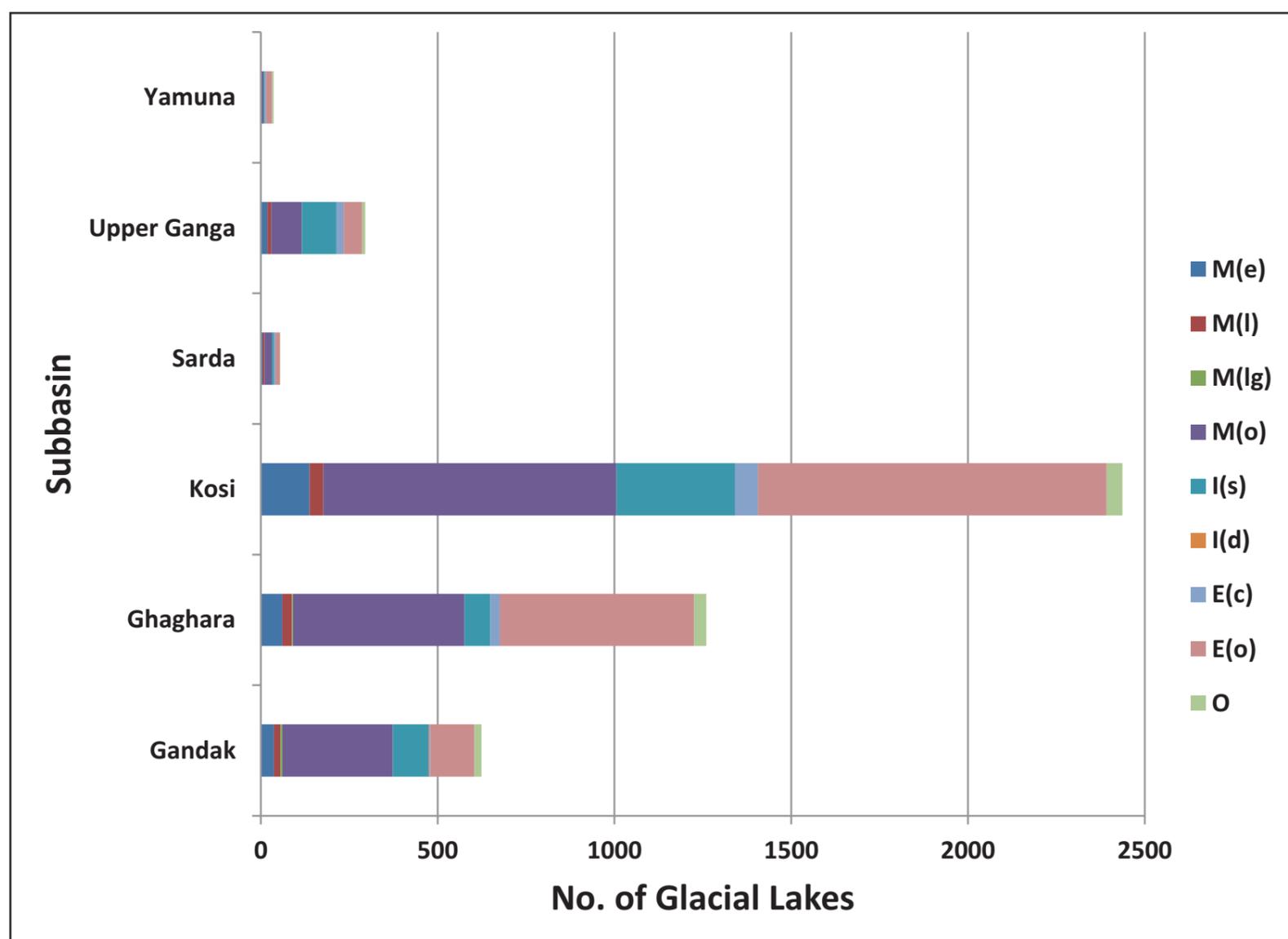
Figure 64: Subbasin-wise vs. Type-wise distribution of GL in Ganga River basin

Subbasin-Elevation range-wise Distribution

Glacial lake distribution has been analyzed as per subbasin vs. elevation range-wise, given in Table 51 and Figure 65. Majority of glacial lakes are situated in all subbasins in very high altitude range i.e. > 5,000 m except in Yamuna subbasin. After that, majority of glacial lakes in all subbasins are located in high and medium altitude range i.e. 4,001 - 5,000 m and 3,001 - 4,000 m. Only one lake is located in Gandak subbasin in the elevation range up to 3,000 m.

Table 51: Subbasin-wise vs. Elevation range-wise distribution of GL in Ganga River basin

S. No.	Subbasin	Elevation Range (m)							
		up to 3,000		3,001 - 4,000		4,001 - 5,000		> 5,000	
		No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)
1	Gandak	1	9.87	22	68.27	220	1,060.56	381	774.14
2	Ghaghara	0	0.00	8	58.91	563	1,842.89	689	1,634.59
3	Kosi	0	0.00	21	90.74	856	4,049.65	1,560	10,463.95
4	Sarda	0	0.00	3	0.93	36	95.29	16	22.63
5	Upper Ganga	0	0.00	4	2.68	148	263.09	143	181.49
6	Yamuna	0	0.00	4	2.04	32	63.42	0	0.00
	Total	**1**	**9.87**	**62**	**223.57**	**1,855**	**7,374.90**	**2,789**	**13,076.80**
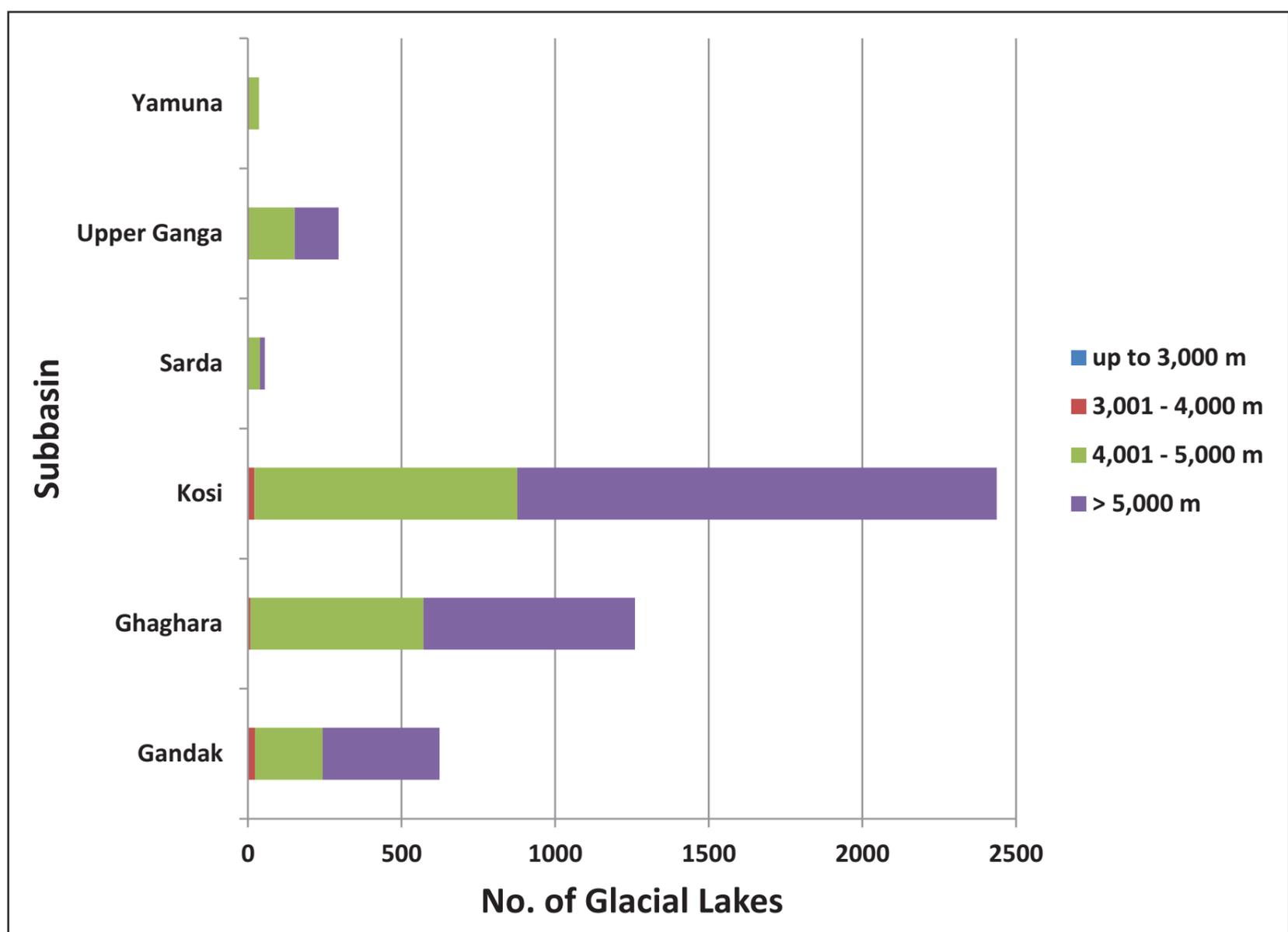
Figure 65: Subbasin-wise vs. Elevation range-wise distribution of GL in Ganga River basin

5.4 India Level Statistics

Ganga River basin covers part of India and transboundary region, where in India it is covering a total area of 60,260 Km² i.e. 24.38% of the basin area. In India, basin area has been spread in three states viz., Himachal Pradesh, Uttarakhand, and West Bengal. Both states of Himachal Pradesh and Uttarakhand covers a total of 99.17% of the basin area lies within India and remaining 0.83% in West Bengal which does not contain any glacial lake. Amongst all 11 subbasins, only 4 subbasins viz., Yamuna, Upper Ganga, Ramganga, and Sarda (partly), has their source of origin and located within in the Indian region. Whereas, Ramganga subbasin does not contain any glacial lake. Remaining subbasins located entirely in transboundary region. A total of 369 glacial lakes lies within Indian region, covering a total area of 603.78 ha i.e. 0.01% of the total area of the Ganga River basin.

Area range-wise Distribution

In Indian region, glacial lakes have been distributed in all 5 classes of area ranges except ≥ 50 ha. Table 52 and Figure 66 shows the area range-wise distribution of glacial lakes for the Indian region. About 339 (91.87%) lakes are with < 5 ha lake area contributing to 52.36% of total lake area. The remaining lakes with ≥ 5 ha in size are only 30 (8.13%) but contributing to 47.64% of total lake area in the region.

Table 52: Area range-wise distribution of GL in India

S. No.	Lake Area Range (ha)	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	0.25 - 0.5	145	49.60	8.21
2	0.5 - 1	104	73.42	12.16
3	1 - 5	90	193.14	31.99
4	5 - 10	20	135.76	22.49
5	10 - 50	10	151.86	25.15
6	≥ 50	0	0.00	0.00
Total		**369**	**603.78**	**100.00**
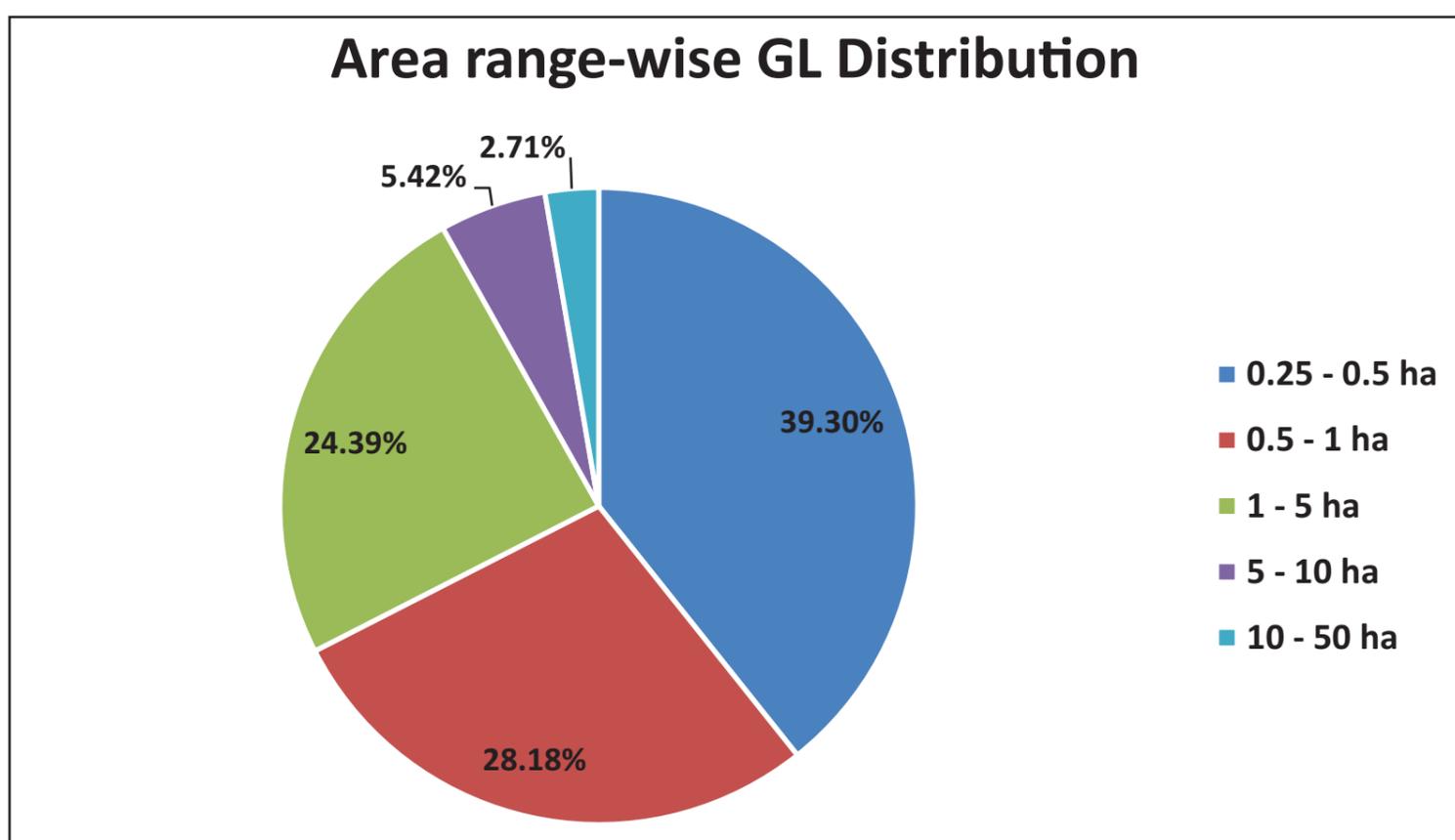
Figure 66: Area range-wise distribution of GL in India

Type-wise Distribution

Distribution of different types of glacial lake in the Indian region is given in Table 53 and Figure 67. Out of all 9 types of glacial lake, 7 types of lakes are present in the Indian region, where Other Moraine Dammed lake is found to be the maximum with 110 (29.81%) occupying a total lake extent of 131.52 ha at 21.78% in the region. After that, Supra-glacial and Other Glacial Erosion types of lake are in majority with 106 (28.73%) and 79 (21.41%) and extend over a total area of 78.57 ha (13.01%) and 104.22 ha (17.26%) respectively.

Table 53: Type-wise distribution of GL in India

S. No.	Code	Types of Glacial Lake	No. of Lakes	Total Lake Area (ha)	Total Lake Area (%)
1	M(e)	End-moraine Dammed Lake	24	147.21	24.38
2	M(l)	Lateral Moraine Dammed Lake	11	20.42	3.38
3	M(lg)	Lateral Moraine Dammed Lake with Ice	0	0.00	0.00
4	M(o)	Other Moraine Dammed Lake	110	131.52	21.78
5	I(s)	Supra-glacial Lake	106	78.57	13.02
6	I(d)	Glacier Ice-dammed Lake	0	0.00	0.00
7	E(c)	Cirque Erosion Lake	26	110.18	18.25
8	E(o)	Other Glacial Erosion Lake	79	104.22	17.26
9	O	Other Glacial Lake	13	11.66	1.93
		Total	**369**	**603.78**	**100.00**
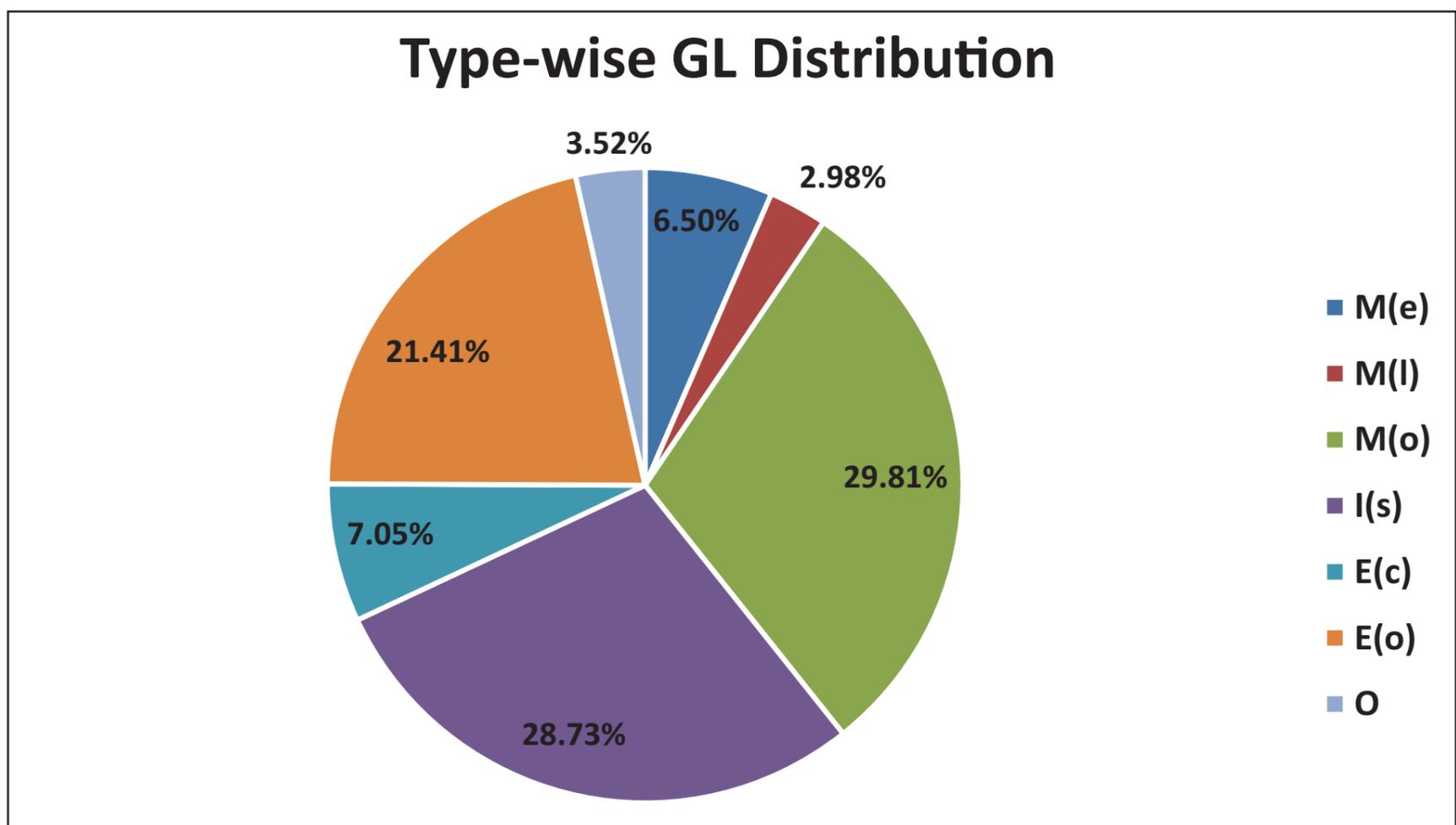
Figure 67: Type-wise distribution of GL in India

Area range-Type-wise Distribution

Glacial lake distribution by area range vs. type-wise is given in Table 54 and Figure 68. The lakes with < 5 ha in size (91.87%) are dominant with Other Moraine Dammed (30.68%) and Supra-glacial lakes (30.38%). Lakes with ≥ 5 ha (8.13%) are dominated by Cirque Erosion type (30.00%). All types of Moraine-dammed lakes, which constitute about 39.30% are predominantly with < 5 ha in water spread.

Table 54: Area range-wise vs. Type-wise distribution of GL in India

S. No.	Lake Area Range (ha)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	0.25 - 0.5	1	1	0	37	73	0	1	26	6	145
2	0.5 - 1	1	5	0	41	25	0	5	23	4	104
3	1 - 5	15	4	0	26	5	0	11	26	3	90
4	5 - 10	1	1	0	6	1	0	8	3	0	20
5	10 - 50	6	0	0	0	2	0	1	1	0	10
6	≥ 50	0	0	0	0	0	0	0	0	0	0
	Total	**24**	**11**	**0**	**110**	**106**	**0**	**26**	**79**	**13**	**369**
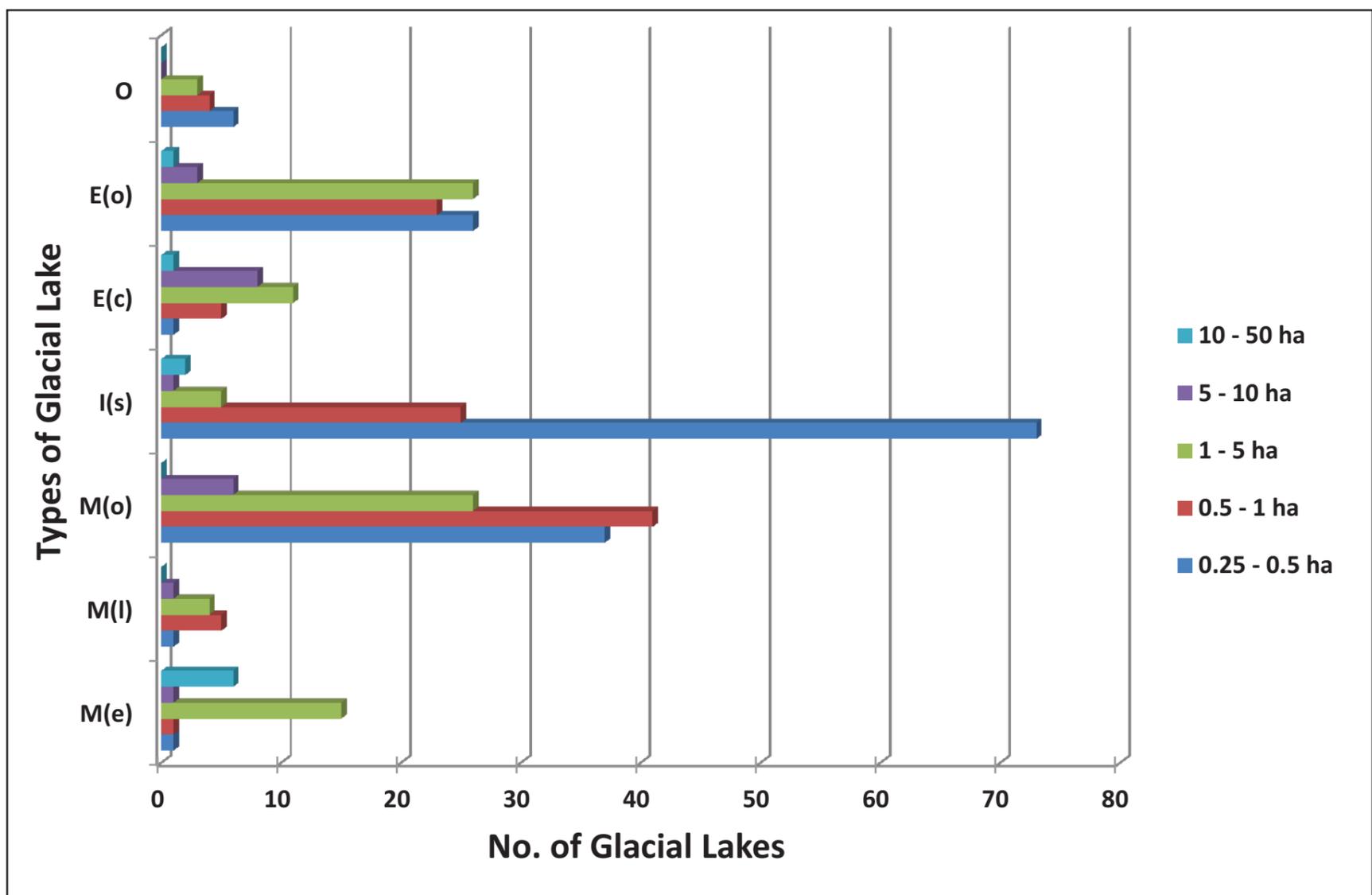
Figure 68: Area range-wise vs. Type-wise distribution of GL in India

Elevation range-wise Distribution

Elevation range-wise distribution of the glacial lakes in the Indian region has been shown in Table 55 and Figure 69. Majority of glacial lakes are situated above 4,000 m elevation range i.e. 358 (97.02%) with total lake area of 598.15 ha (99.07%) and remaining 2.98% glacial lakes are below 4,001 m elevation.

Table 55: Elevation range-wise distribution of GL in India

S. No.	Elevation Range (m)	No. of Lakes	Total Lake Area	
			(ha)	(%)
1	up to 3,000	0	0.00	0.00
2	3,001 - 4,000	11	5.63	0.93
3	4,001 - 5,000	202	398.69	66.03
4	> 5,000	156	199.46	33.04
	Total	**369**	**603.78**	**100.00**
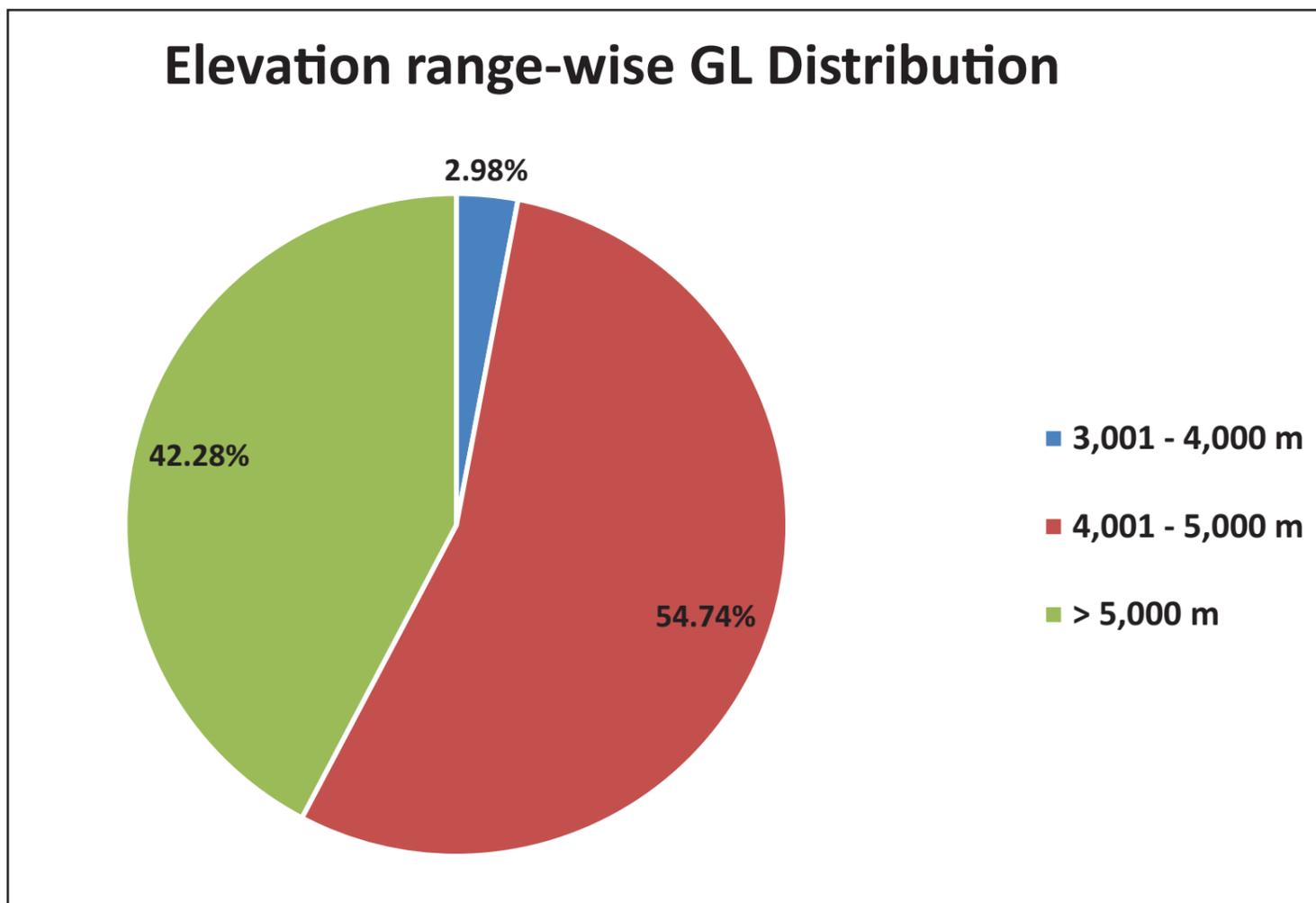
Figure 69: Elevation range-wise distribution of GL in India

Area-Elevation range-wise Distribution

Glacial lake distribution has been analyzed as per area range vs. elevation range-wise, given in Table 56 and Figure 70. It is noted that, 54.74% of glacial lakes (202) are situated in high altitude range i.e. 4,001 - 5,000 m, which also constitutes majority of total lake area within that range i.e. 66.03%. However, 11 glacial lakes lies below 4,001 m, has all of its lakes < 5 ha in size. 87.62% of lakes lying in high altitude range are < 5 ha, predominantly of size ranging 0.25 - 0.5 ha (i.e. 80), followed by lakes of size 0.5 - 1 ha (i.e. 55). It has been further noticed that, 12.38% of lakes ≥ 5 ha are lying within in the high altitude range only, majority of them falling in size ranging of 5 - 10 ha.

Table 56: Area range-wise vs. Elevation range-wise distribution of GL in India

| S. No. | Lake Area Range (ha) | Elevation Range (m) | | | | | | | | Total | |
| | | up to 3,000 | | 3,001 - 4,000 | | 4,001 - 5,000 | | > 5,000 | | | |
		No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Lake Area (ha)
1	0.25 - 0.5	0	0.00	7	2.39	80	27.59	58	19.61	145	49.60
2	0.5 - 1	0	0.00	3	2.14	55	38.83	46	32.45	104	73.42
3	1 - 5	0	0.00	1	1.11	42	85.54	47	106.49	90	193.14
4	5 - 10	0	0.00	0	0.00	16	111.88	4	23.89	20	135.76
5	10 - 50	0	0.00	0	0.00	9	134.85	1	17.02	10	151.86
6	≥ 50	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Total	**0**	**0.00**	**11**	**5.64**	**202**	**398.69**	**156**	**199.46**	**369**	**603.78**
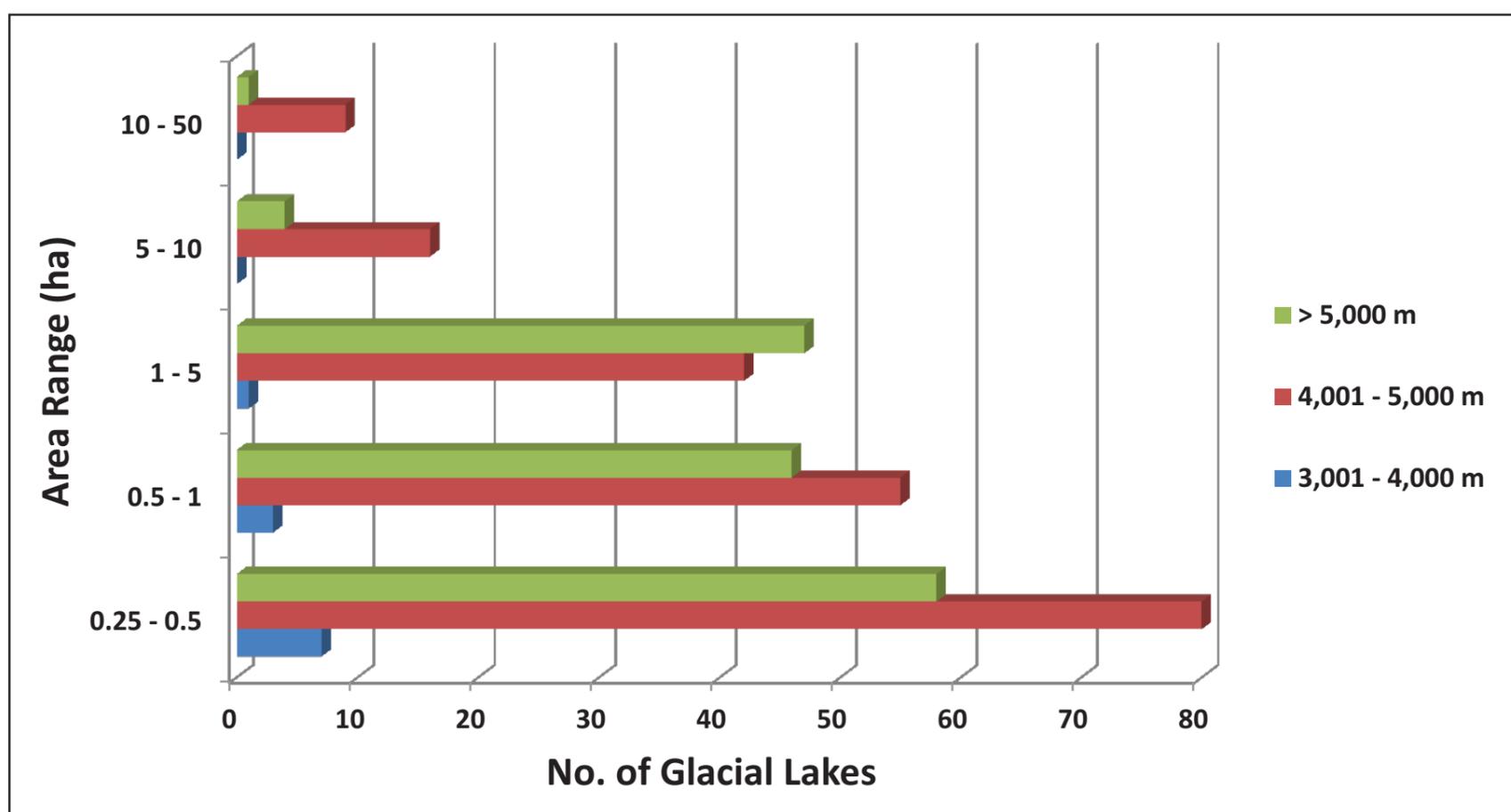
Figure 70: Area range-wise vs. Elevation range-wise distribution of GL in India

Type-Elevation range-wise Distribution

Glacial lake distribution has also been analyzed as per type-wise vs. elevation range-wise, given in Table 57 and Figure 71. The dominant lake type in the region i.e. Other Moraine Dammed lake (29.81%) is predominantly located in the elevation range of > 5,000 m (69.09%). The other dominant lake type, namely, Supra-glacial and Other Glacial Erosion lakes are distributed predominantly in high altitude range i.e. 4,001 - 5,000 m elevation range, i.e. 83.02% and 63.29%. Majority i.e. 98.62% of all types of Moraine-dammed lakes lies above 4,000 m.

Table 57: Type-wise vs. Elevation range-wise distribution of GL in India

S. No.	Elevation Range (m)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	up to 3,000	0	0	0	0	0	0	0	0	0	0
2	3,001 - 4,000	0	0	0	2	0	0	0	1	8	11
3	4,001 - 5,000	9	7	0	32	88	0	15	50	1	202
4	> 5,000	15	4	0	76	18	0	11	28	4	156
	Total	**24**	**11**	**0**	**110**	**106**	**0**	**26**	**79**	**13**	**369**
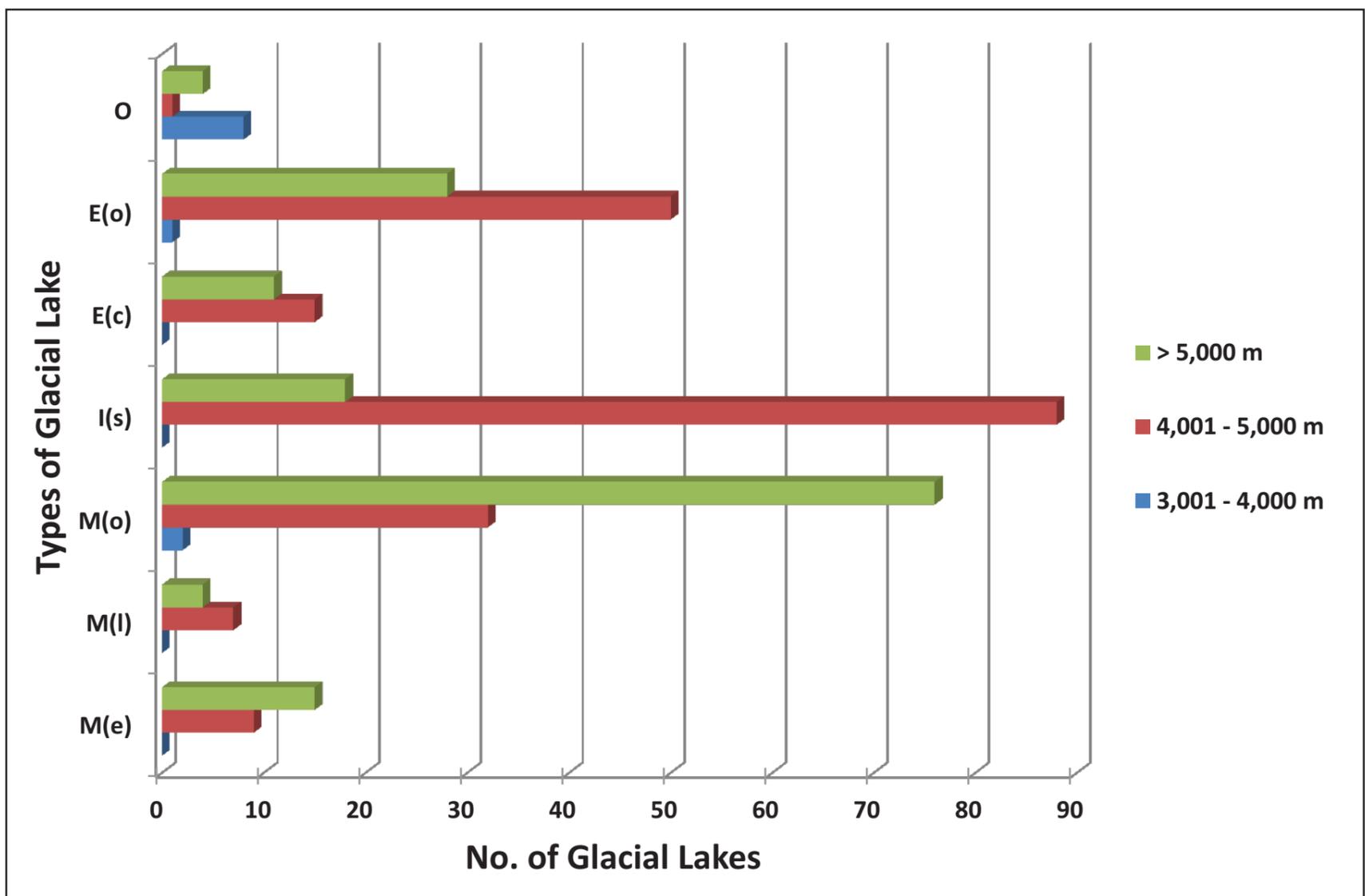
Figure 71: Type-wise vs. Elevation range-wise distribution of GL in India

5.5 Indian State's Statistics

Glacial lakes located in 2 states of Indian region are compared for lake count, total lake area, lake types and their elevation ranges in the following sections.

State-wise Distribution

Table 58 and Figure 72 shows the State-wise distribution of glacial lakes of Indian region. Lakes are predominantly distributed in Uttarakhand (UK) with 345 (93.50%) occupying a total lake extent of 547.65 ha at 90.70% in the region. Himachal Pradesh contains only 24 glacial lakes (6.50%) extend over an area of 56.13 ha (9.30%).

Table 58: State-wise distribution of GL in India

S. No.	Code	State	No. of Lakes	Total Lake Area	
				(ha)	(%)
1	HP	Himachal Pradesh	24	56.13	9.30
2	UK	Uttarakhand	345	547.65	90.70
		Total	**369**	**603.78**	**100.00**
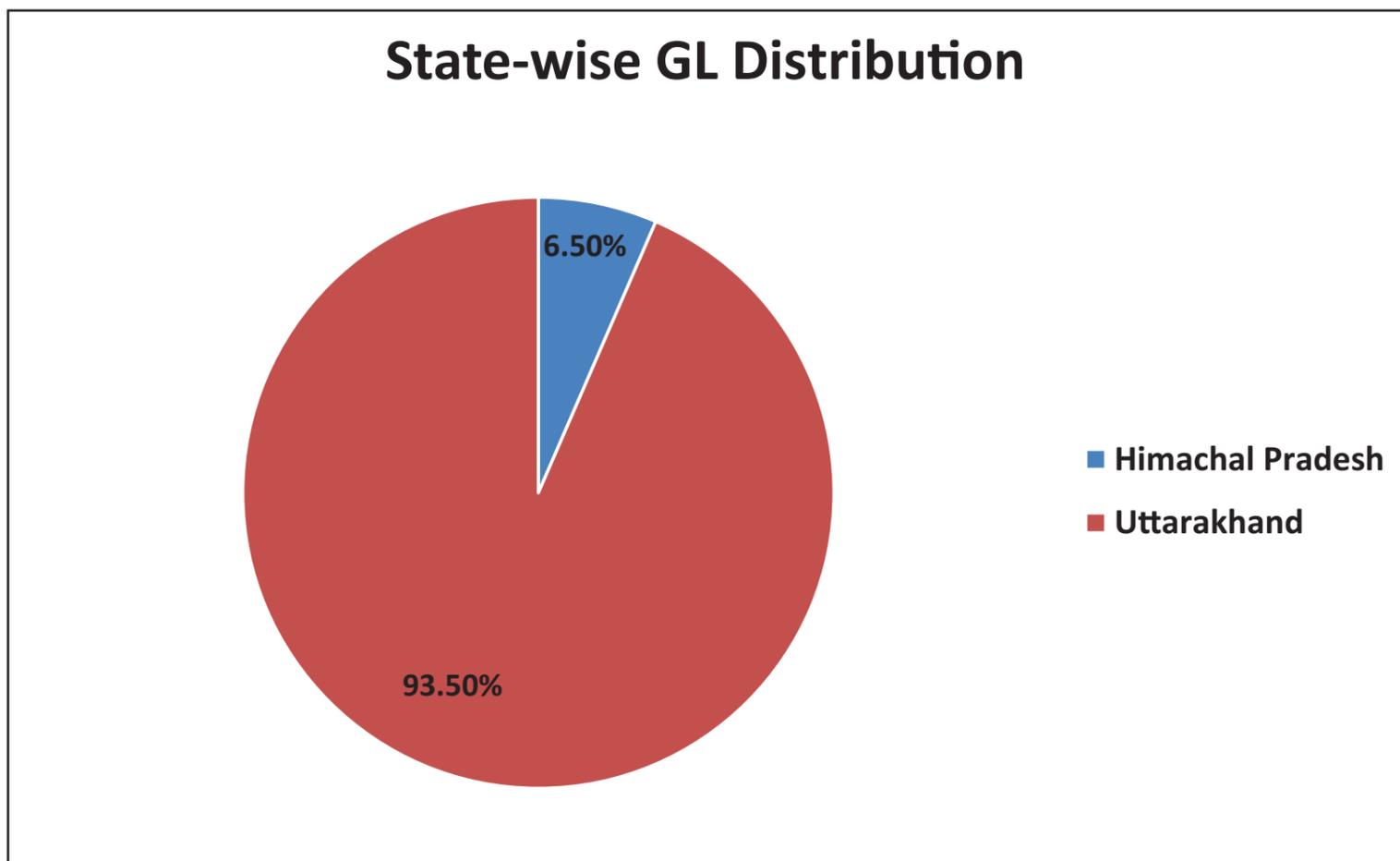
Figure 72: State-wise distribution of GL in India

State-Area range-wise Distribution

Glacial lakes have been distributed in both states for all 5 classes of area ranges except ≥ 50 ha. Table 59 and Figure 73 shows the State vs. area range-wise distribution of glacial lakes for the Indian region. It has been observed that, glacial lakes in Uttarakhand (UK) are predominantly < 5 ha (92.17%), majority of which are within 0.25 - 0.5 ha in size i.e. 40.29%, followed by lakes of 0.5 - 1 ha in size i.e. 27.83%. Not only in Uttarakhand (UK), but maximum number of lakes < 5 ha are (87.50%) located in Himachal Pradesh also.

Table 59: State-wise vs. Area range-wise distribution of GL in India

S. No.	Lake Area Range (ha)	State				Total	
		Himachal Pradesh		Uttarakhand			
		No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Lake Area (ha)
1	0.25 - 0.5	6	1.93	139	47.66	145	49.60
2	0.5 - 1	8	6.22	96	67.20	104	73.42
3	1 - 5	7	13.95	83	179.19	90	193.14
4	5 - 10	1	8.26	19	127.50	20	135.76
5	10 - 50	2	25.77	8	126.10	10	151.86
6	≥ 50	0	0.00	0	0.00	0	0.00
	Total	**24**	**56.13**	**345**	**547.65**	**369**	**603.78**
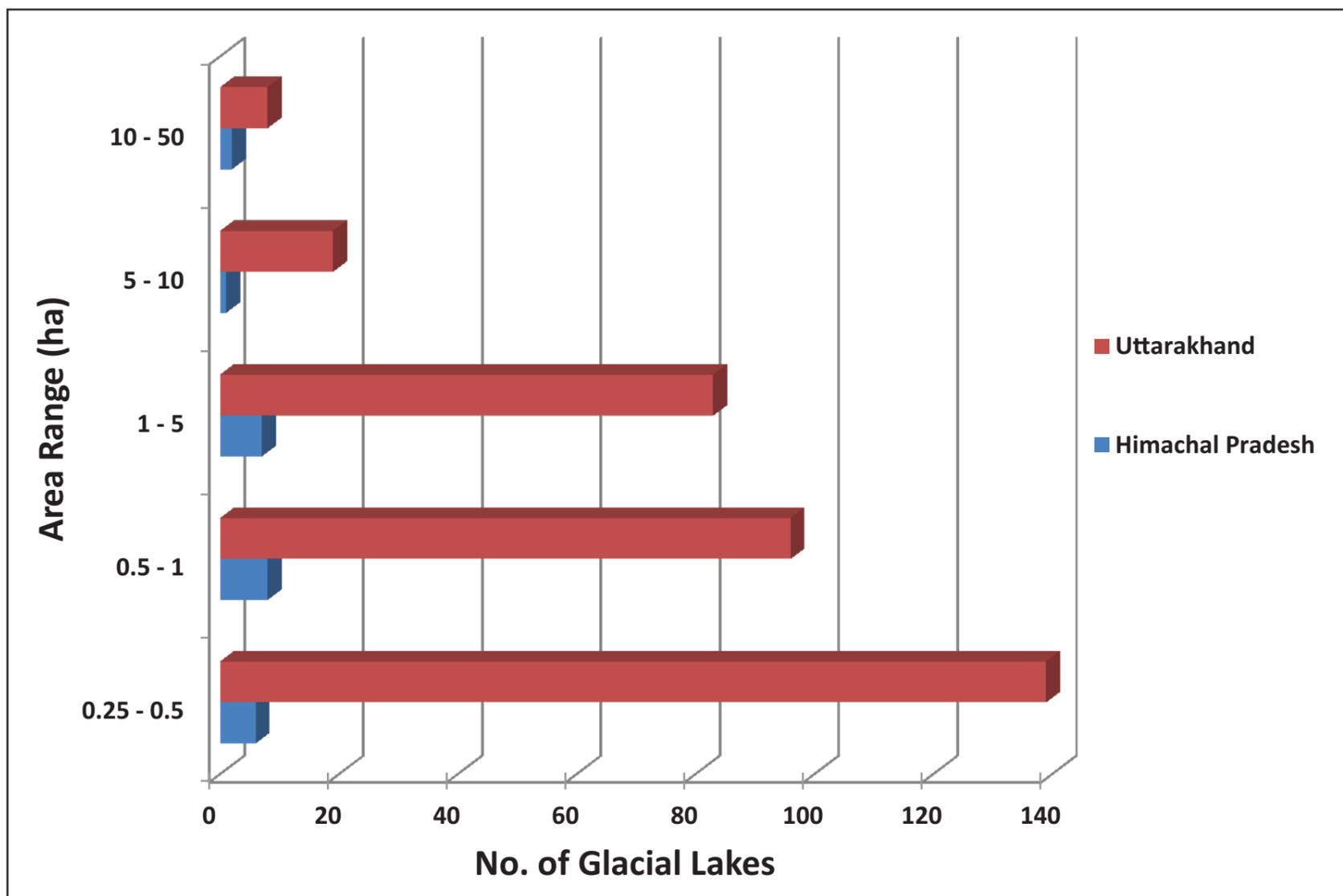
Figure 73: State-wise vs. Area range-wise distribution of GL in India

State-Type-wise Distribution

Glacial lake distribution by State vs. type-wise is given in Table 60 and Figure 74. It has been observed that, Uttarakhand contains maximum number of all types of glacial lake in comparison with Himachal Pradesh, with majority of Supra-glacial i.e. 30.72%, followed by Other Moraine Dammed lakes i.e. 29.85%. All types of Moraine-dammed lakes in Uttarakhand are 138 with 40.00%.

Table 60: State-wise vs. Type-wise distribution of GL in India

S. No.	State	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	Himachal Pradesh	0	0	0	7	0	0	3	13	1	24
2	Uttarakhand	24	11	0	103	106	0	23	66	12	345
	Total	**24**	**11**	**0**	**110**	**106**	**0**	**26**	**79**	**13**	**369**
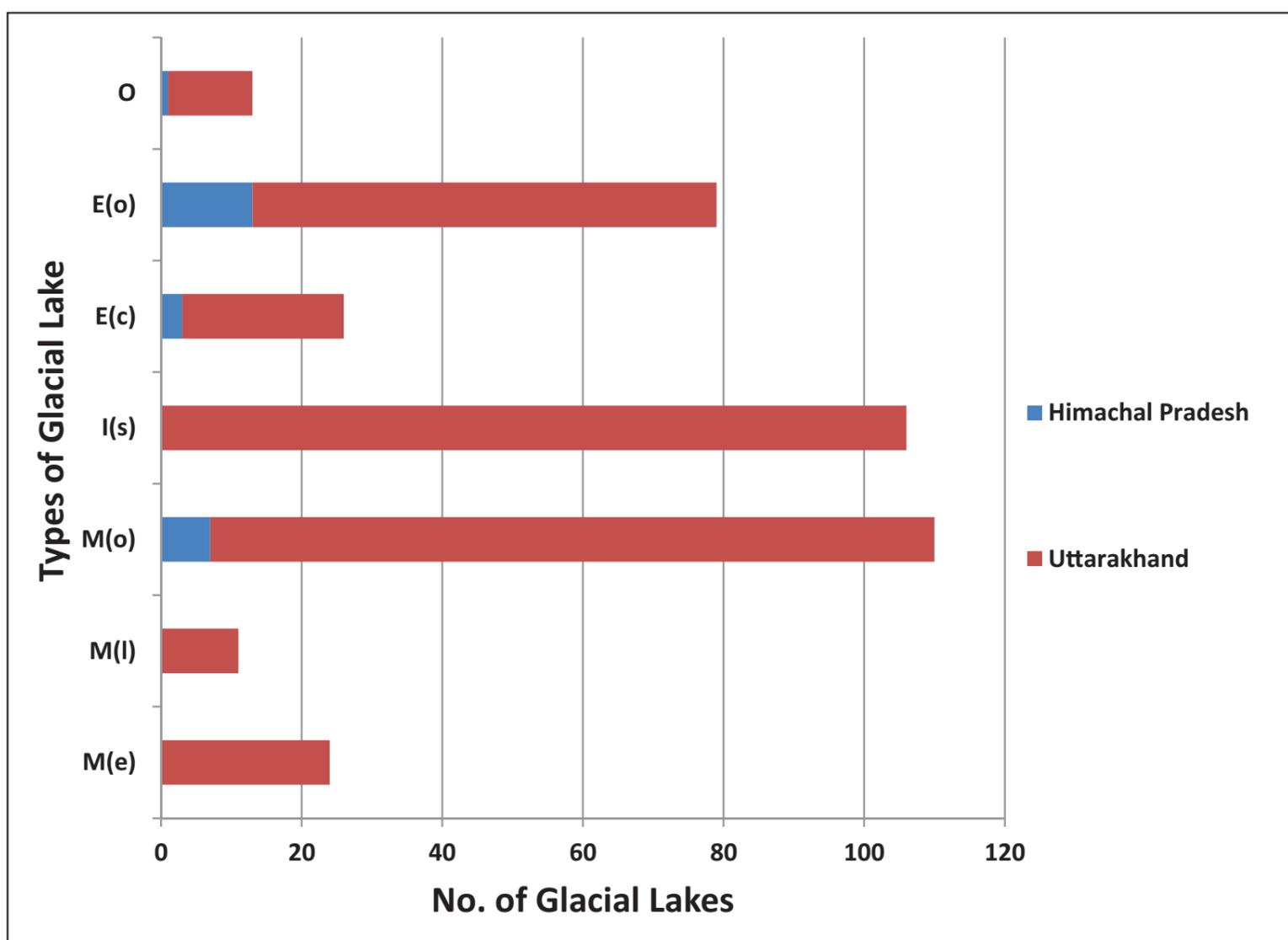
Figure 74: State-wise vs. Type-wise distribution of GL in India

State-Elevation range-wise Distribution

Glacial lake distribution has been analyzed as per State vs. elevation-range wise, given in Table 61 and Figure 75. It has been observed that, majority of glacial lakes (54.74%) are located in high altitude range i.e. 4,001 - 5,000 m in both states. This is followed by very high altitude range i.e. > 5,000 m in both states (42.28%).

Table 61: State-wise vs. Elevation range-wise distribution of GL in India

S. No.	Elevation Range (m)	Himachal Pradesh		Uttarakhand		Total	
		No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Lake Area (ha)
1	up to 3,000	0	0.00	0	0.00	0	0.00
2	3,001 - 4,000	0	0.00	11	5.64	11	5.64
3	4,001 - 5,000	19	52.70	183	345.98	202	398.68
4	> 5,000	5	3.43	151	196.03	156	199.46
	Total	**24**	**56.13**	**345**	**547.65**	**369**	**603.78**
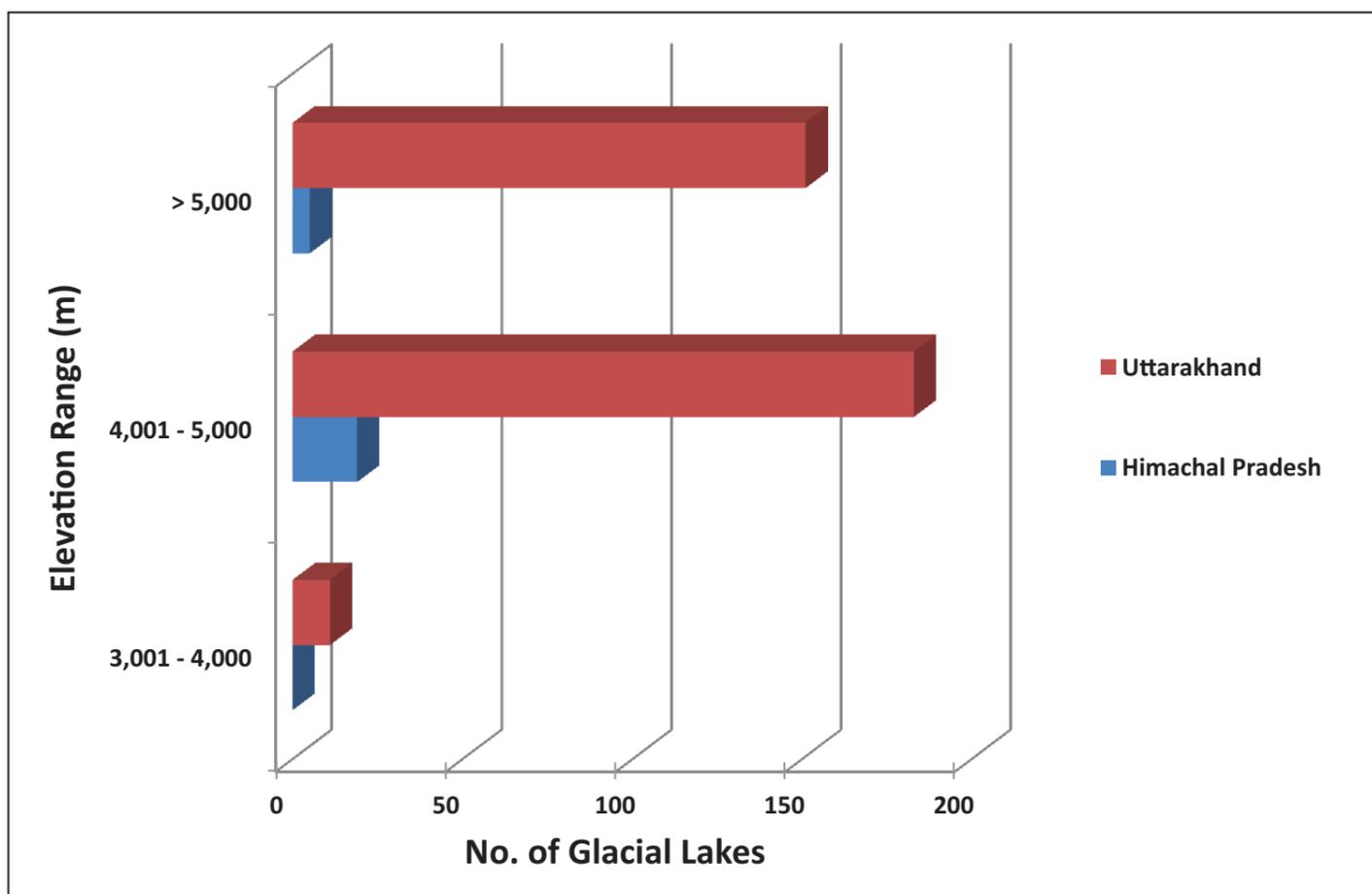
Figure 75: State-wise vs. Elevation range-wise distribution of GL in India

5.5.1 District Level Statistics of Himachal Pradesh

Himachal Pradesh is the second largest state covering the area of Ganga River basin, contains glacial lakes only in two districts viz., Kinnaur and Shimla. Amongst which, Shimla covers the majority of the total lake area.

Area range-wise Distribution

Glacial lakes have been distributed in both districts for 5 classes of area ranges except ≥ 50 ha, and area range-wise distribution for both districts has been shown in Table 62 and Figure 76. Glacial lakes in Shimla district are found to be the maximum with 16 (66.67%) occupying a total lake extent of 49.46 ha at 81.10%. About 21 (87.50%) lakes are with < 5 ha lake area contributing to 39.37% of total lake area in the state. Whereas, remaining lakes in the district with ≥ 5 ha in size are only 12.50%, predominantly of 10 - 50 ha in size. All lakes located in Kinnaur district are < 5 ha.

Table 62: Area range-wise distribution of GL in Districts of Himachal Pradesh

S. No.	Lake Area Range (ha)	Districts of Himachal Pradesh				Total	
		Kinnaur		Shimla			
		No. of Lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Lake Area (ha)
1	0.25 - 0.5	1	0.25	5	1.68	6	1.93
2	0.5 - 1	4	2.96	4	3.27	8	6.23
3	1 - 5	3	3.46	4	10.48	7	13.94
4	5 - 10	0	0.00	1	8.26	1	8.26
5	10 - 50	0	0.00	2	25.77	2	25.77
6	≥ 50	0	0.00	0	0.00	0	0.00
	Total	8	6.67	16	49.46	24	56.13
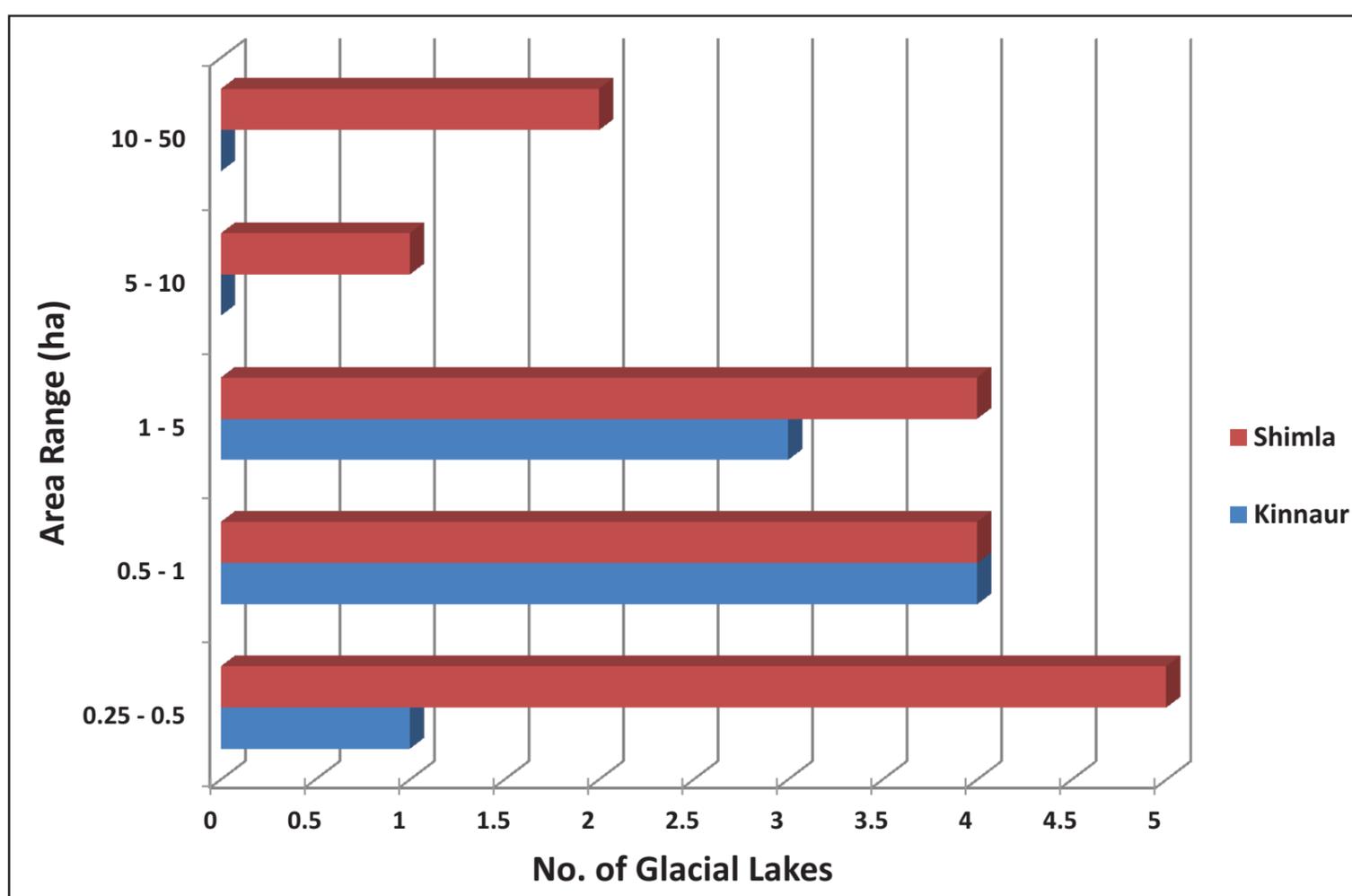
Figure 76: Area range-wise distribution of GL in Districts of Himachal Pradesh

Type-wise Distribution

Distribution of different types of glacial lake in the districts of Himachal Pradesh is given in Table 63 and Figure 77. It has been observed that, Other Glacial Erosion lakes are maximum with 13 (54.17%) in the state, followed by Other Moraine Dammed lakes with 7 (29.17%). Shimla district contains maximum number of glacial lakes in comparison with Kinnaur district, with majority of Other Glacial Erosion lakes (62.50%).

Table 63: Type-wise distribution of GL in Districts of Himachal Pradesh

S. No.	District	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	Kinnaur	0	0	0	4	0	0	0	3	1	8
2	Shimla	0	0	0	3	0	0	3	10	0	16
Total		**0**	**0**	**0**	**7**	**0**	**0**	**3**	**13**	**1**	**24**
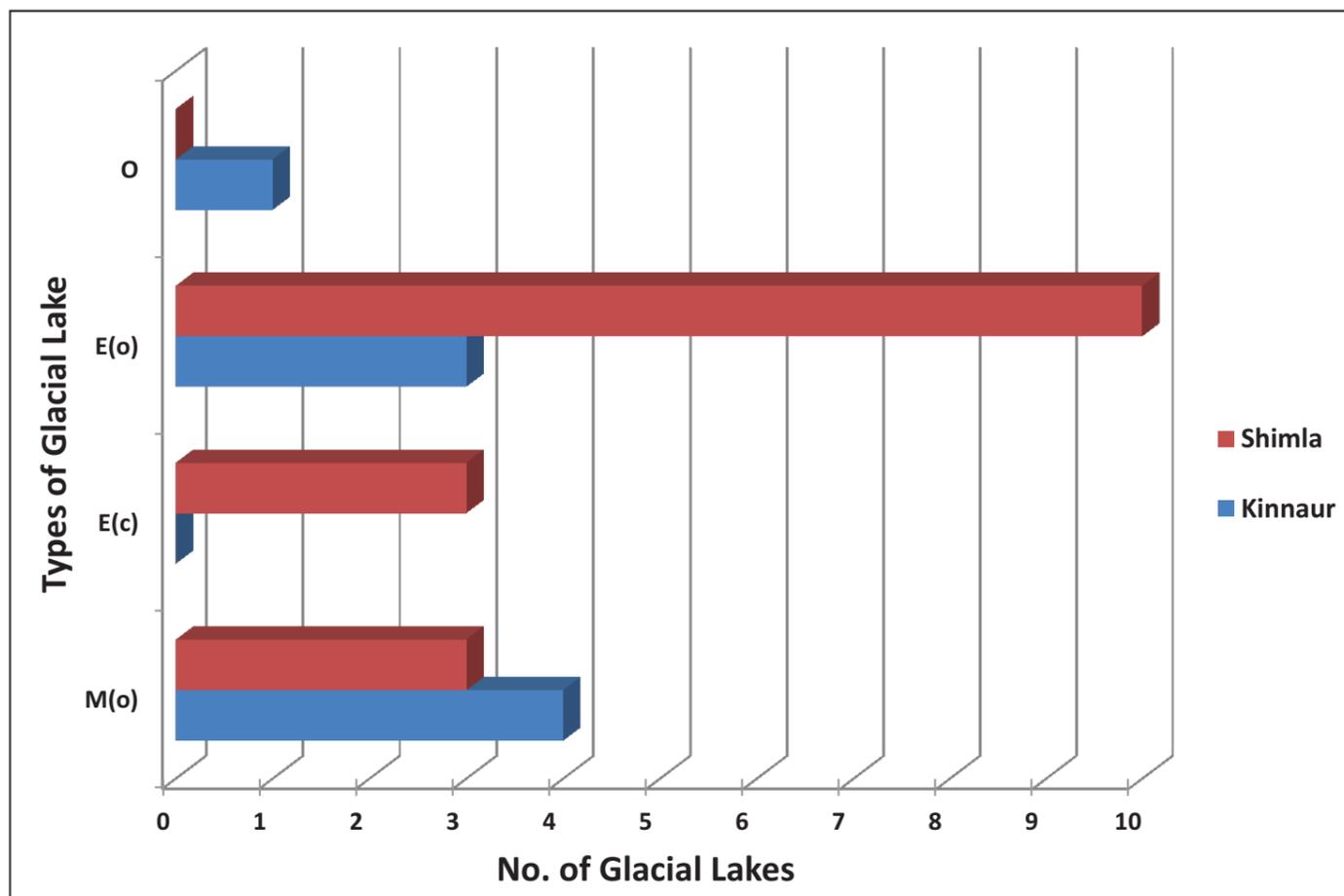
Figure 77: Type-wise distribution of GL in Districts of Himachal Pradesh

Elevation range-wise Distribution

Elevation range-wise distribution of the glacial lakes in the districts of Himachal Pradesh has been shown in Table 64 and Figure 78. All glacial lakes in the districts of Himachal Pradesh are situated above 4,000 m elevation range i.e. 24 with total lake area of 56.13 ha. Shimla district contains all glacial lakes in the elevation range of 4,001 m - 5,000 m in comparison with Kinnaur district. Elevation range-type-wise spatial distribution of glacial lakes has been represented in Figure 79.

Table 64: Elevation range-wise distribution of GL in Districts of Himachal Pradesh

| S. No. | Elevation Range (m) | Districts of Himachal Pradesh | | | | Total | |
| | | Kinnaur | | Shimla | | | |
		No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Lake Area (ha)
1	up to 3,000	0	0.00	0	0.00	0	0.00
2	3,001 - 4,000	0	0.00	0	0.00	0	0.00
3	4,001 - 5,000	3	3.24	16	49.46	19	52.70
4	> 5,000	5	3.43	0	0.00	5	3.43
	Total	**8**	**6.67**	**16**	**49.46**	**24**	**56.13**
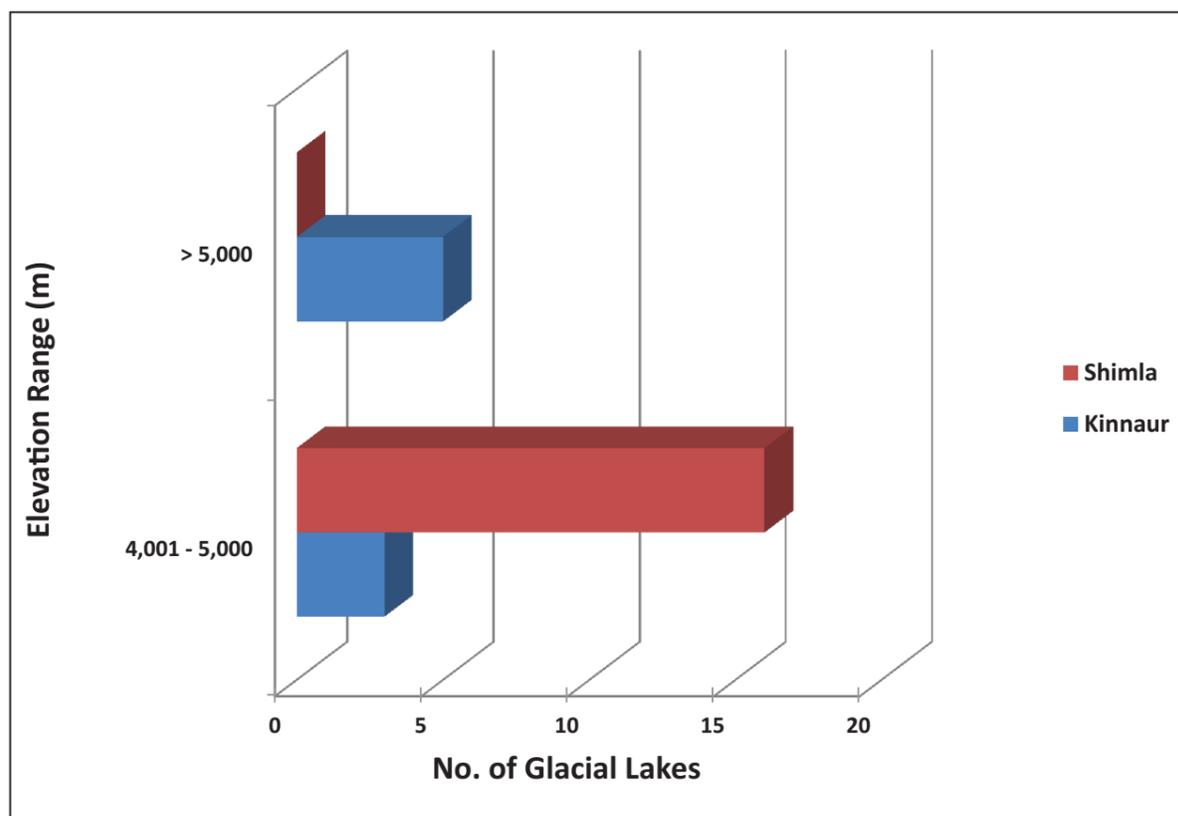
Figure 78: Elevation range-wise distribution of GL in Districts of Himachal Pradesh
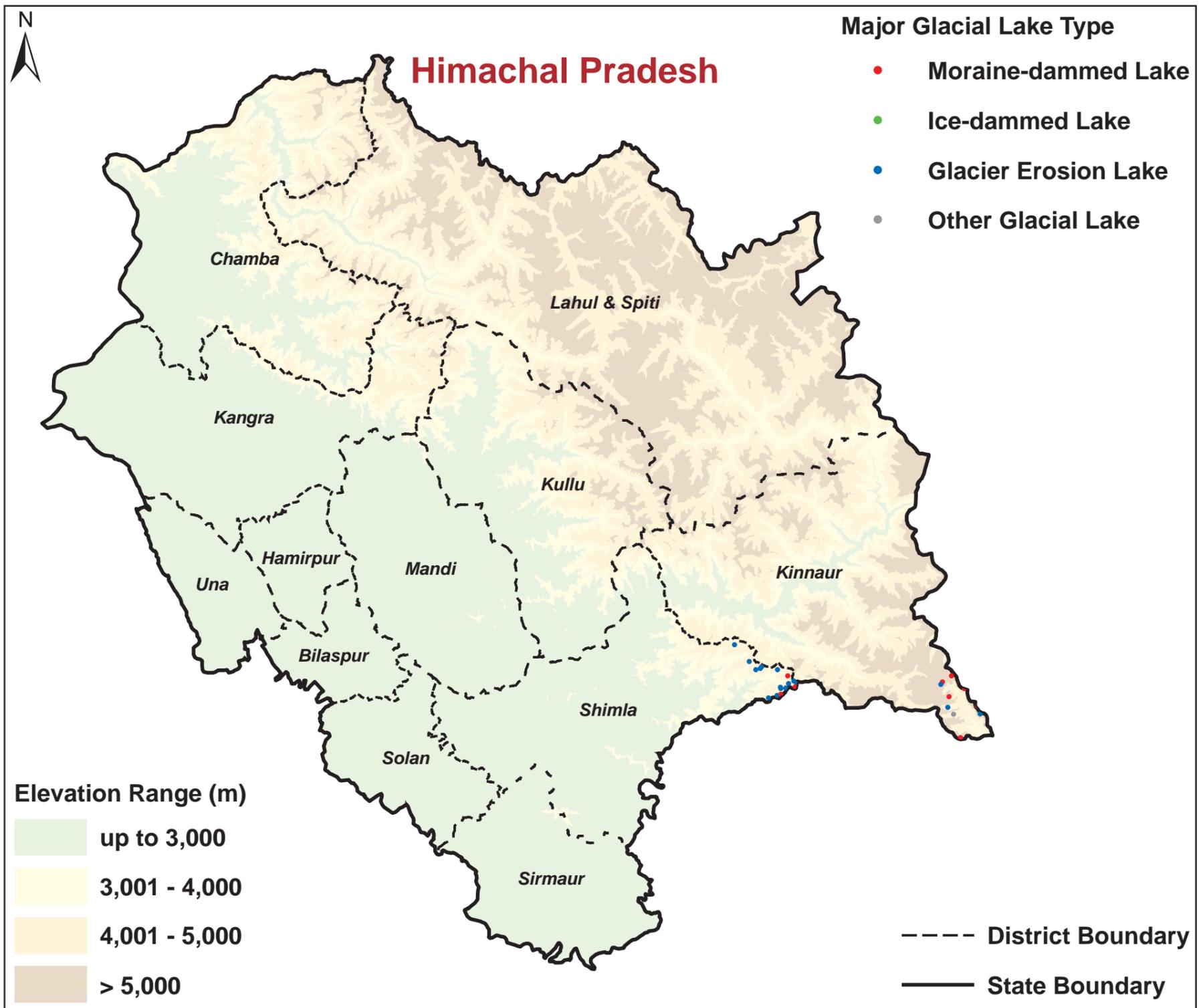
Figure 79: Elevation range-Type-wise spatial distribution of GL in Himachal Pradesh

5.5.2 District Level Statistics of Uttarakhand

Uttarakhand is the largest state covering area of Ganga River basin, contains glacial lakes in six districts viz., Bageshwar, Chamoli, Pithoragarh, Rudraprayag, Tehri Garhwal, and Uttarkashi. Amongst which, Chamoli has the majority of glacial lakes covering 46.14% of the total lake area in the state.

Area range-wise Distribution

Glacial lakes has been distributed in 6 districts of Uttarakhand for 5 classes of area ranges except ≥ 50 ha area range, and area range-wise distribution for those has been shown in Table 65 and Figure 80. Glacial lakes in Chamoli district are found to be the maximum with 192 (55.65%) occupying a total lake extent of 252.71 ha at 46.14%. About 318 (92.17%) lakes are with < 5 ha lake area contributing to 53.69% of total lake area in the state. Whereas, remaining lakes in the state with ≥ 5 ha in size are only 7.83%, predominantly of 5 - 10 ha in size.

Table 65: Area range-wise distribution of GL in Districts of Uttarakhand

| S. No. | District | Lake Area Range (ha) | | | | | | | | | | Total | |
| | | 0.25 - 0.5 | | 0.5 - 1 | | 1 - 5 | | 5 - 10 | | 10 - 50 | | | |
		No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Lake Area (ha)
1	Bageshwar	3	0.99	3	2.18	2	6.02	0	0.00	0	0.00	8	9.19
2	Chamoli	92	31.17	53	37.13	36	75.72	7	47.18	4	61.51	192	252.71
3	Pithoragarh	12	4.19	10	6.51	13	25.08	3	20.42	3	39.02	41	95.22
4	Rudraprayag	2	0.68	1	0.55	6	14.68	2	15.15	0	0.00	11	31.06
5	Tehri Garhwal	0	0.00	4	3.18	3	5.34	2	12.91	1	25.56	10	46.99
6	Uttarkashi	30	10.63	25	17.65	23	52.36	5	31.84	0	0.00	83	112.48
	Total	**139**	**47.66**	**96**	**67.20**	**83**	**179.20**	**19**	**127.50**	**8**	**126.09**	**345**	**547.65**
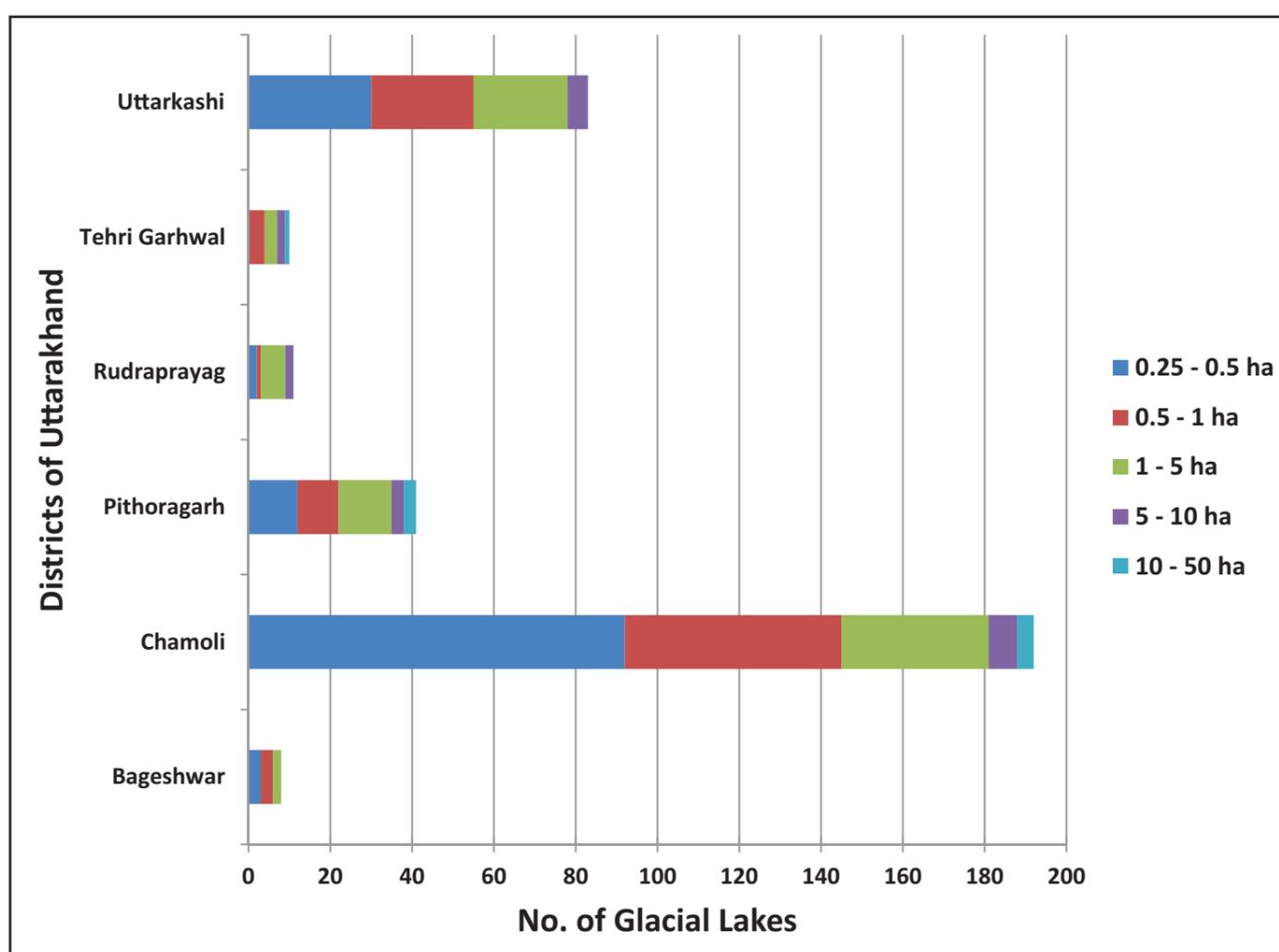
Figure 80: Area range-wise distribution of GL in Districts of Uttarakhand

Type-wise Distribution

Distribution of different types of glacial lake in the districts of Uttarakhand is given in Table 66 and Figure 81. It has been observed that, only 7 types of glacial lake are distributed in the state, where Supra-glacial lakes are found to be the maximum with 106 (30.72%) in the state, followed by Other Moraine Dammed lakes with 103 (29.86%). Chamoli district contains maximum number of glacial lakes in comparison with other districts in the state, with majority of Supra-glacial lakes (38.02%), followed by Other Moraine Dammed lakes i.e. 32.29%.

Table 66: Type-wise distribution of GL in Districts of Uttarakhand

S. No.	District	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	Bageshwar	0	0	0	0	4	0	1	2	1	8
2	Chamoli	8	4	0	62	73	0	11	30	4	192
3	Pithoragarh	5	0	0	20	4	0	3	8	1	41
4	Rudraprayag	0	0	0	0	2	0	4	5	0	11
5	Tehri Garhwal	1	1	0	1	0	0	1	5	1	10
6	Uttarkashi	10	6	0	20	23	0	3	16	5	83
	Total	**24**	**11**	**0**	**103**	**106**	**0**	**23**	**66**	**12**	**345**
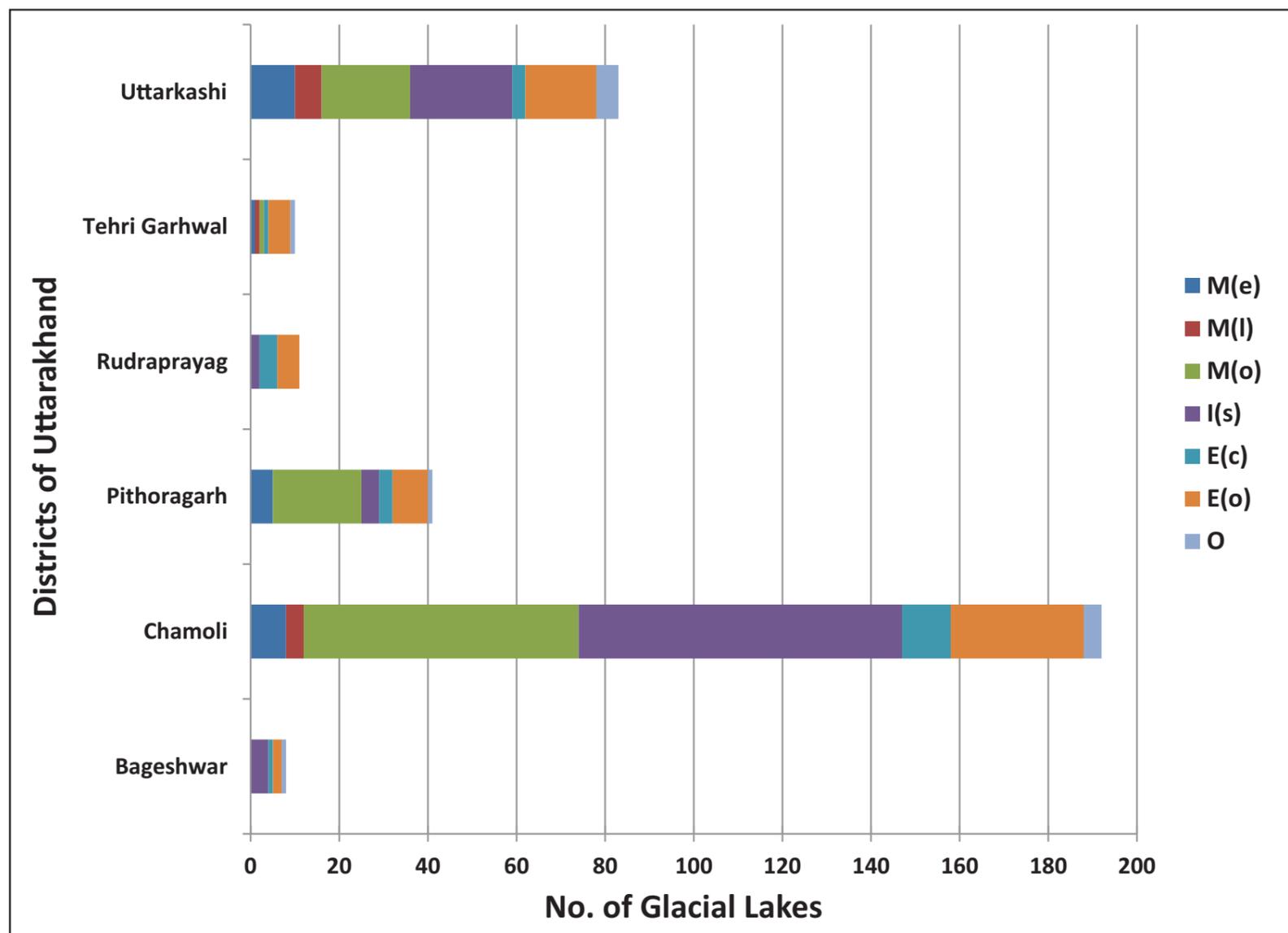
Figure 81: Type-wise distribution of GL in Districts of Uttarakhand

Elevation range-wise Distribution

Elevation range-wise distribution of the glacial lakes in the districts of Uttarakhand has been shown in Table 67 and Figure 82. Majority of glacial lakes (53.04%) are situated in high altitude i.e. 4,001 - 5,000 m elevation range with total lake area of 345.99 ha (63.18%). This is followed by glacial lakes in very high altitude elevation range with 43.77%. Chamoli district contains maximum number of glacial lakes above 4,000 m elevation in comparison with any other district in the state, with majority of them falling in very high altitude range i.e. > 5,000 m. Elevation range-type-wise spatial distribution of glacial lakes has been represented in Figure 83.

Table 67: Elevation range-wise distribution of GL in Districts of Uttarakhand

S. No.	District	Elevation Range (m)							
		up to 3,000		3,001 - 4,000		4,001 - 5,000		> 5,000	
		No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)	No. of Lakes	Total Lake Area (ha)
1	Bageshwar	0	0.00	1	0.41	7	8.78	0	0.00
2	Chamoli	0	0.00	1	0.74	85	121.99	106	129.99
3	Pithoragarh	0	0.00	3	0.93	22	72.18	16	22.12
4	Rudraprayag	0	0.00	0	0.00	11	31.05	0	0.00
5	Tehri Garhwal	0	0.00	1	1.11	9	45.89	0	0.00
6	Uttarkashi	0	0.00	5	2.45	49	66.10	29	43.92
	Total	**0**	**0.00**	**11**	**5.64**	**183**	**345.99**	**151**	**196.03**
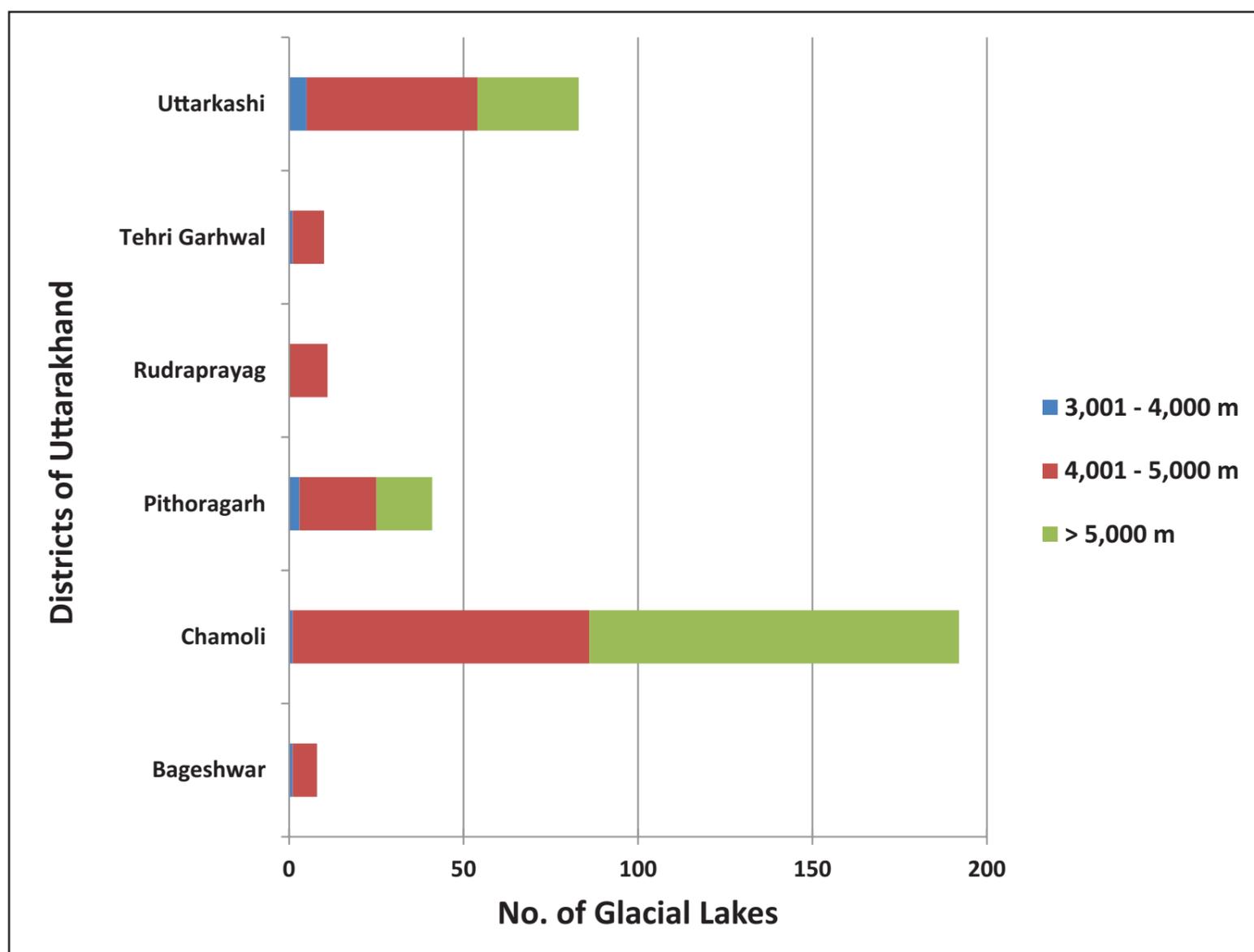
Figure 82: Elevation range-wise distribution of GL in Districts of Uttarakhand
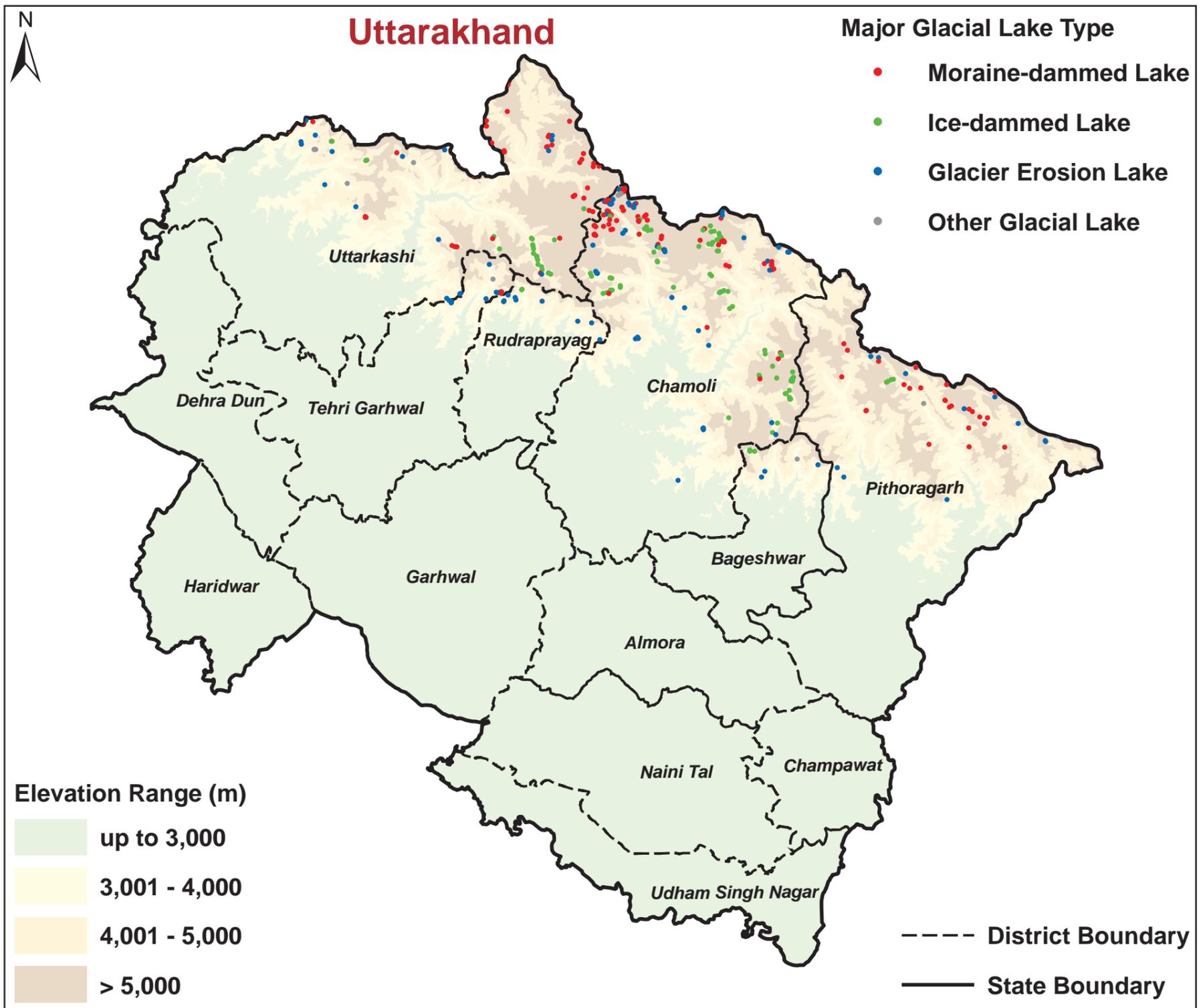
Figure 83: Elevation range-Type-wise spatial distribution of GL in Uttarakhand

5.6 Transboundary Region Statistics

Apart from India, Ganga River basin also covers part of transboundary region which has a total area of 1,86,848 Km^2 i.e. 75.62% of the total river basin area. This transboundary region covers majority part of it in Nepal and little in China (Tibetan region). Elevation in the transboundary region varies from minimum 45 m to maximum 8,848 m amsl. This region has upper part of Ghaghara, Rapti, Bhagmati, Kamla, Gandak, Lower Ganga, and Kosi subbasins, and part of Sarda subbasin. Subbasin region of Rapti, Bhagmati, Kamla, and Lower Ganga does not contain any glacial lake. A total of 4,338 glacial lakes lies within transboundary region, covering a total area of 20,081.34 ha i.e. 0.12% of the total area of the Ganga River basin under transboundary region.

Area range-wise Distribution

In Transboundary region, glacial lakes have been distributed in all 6 classes of area ranges. Table 68 and Figure 84 shows the area range-wise distribution of glacial lakes for the transboundary region. About 3,696 (85.20%) lakes are with < 5 ha lake area contributing to 22.26% of total lake area. The remaining lakes with ≥ 5 ha in size are only 642 (14.80%) but contributing to 77.74% of total lake area in the region.

Table 68: Area range-wise distribution of GL in Transboundary region

S. No.	Lake Area Range (ha)	No. of Lakes	Total Lake Area (ha)	(%)
1	0.25 - 0.5	1,134	402.70	2.01
2	0.5 - 1	1,053	750.62	3.74
3	1 - 5	1,509	3,315.81	16.51
4	5 - 10	295	2,049.12	10.20
5	10 - 50	289	5,786.35	28.81
6	≥ 50	58	7,776.74	38.73
Total		**4,338**	**20,081.34**	**100.00**

Area range-wise GL Distribution

- 0.25 - 0.5 ha
- 0.5 - 1 ha
- 1 - 5 ha
- 5 - 10 ha
- 10 - 50 ha
- ≥ 50 ha

1.34%
6.66%
6.80%
26.14%
34.79%
24.27%
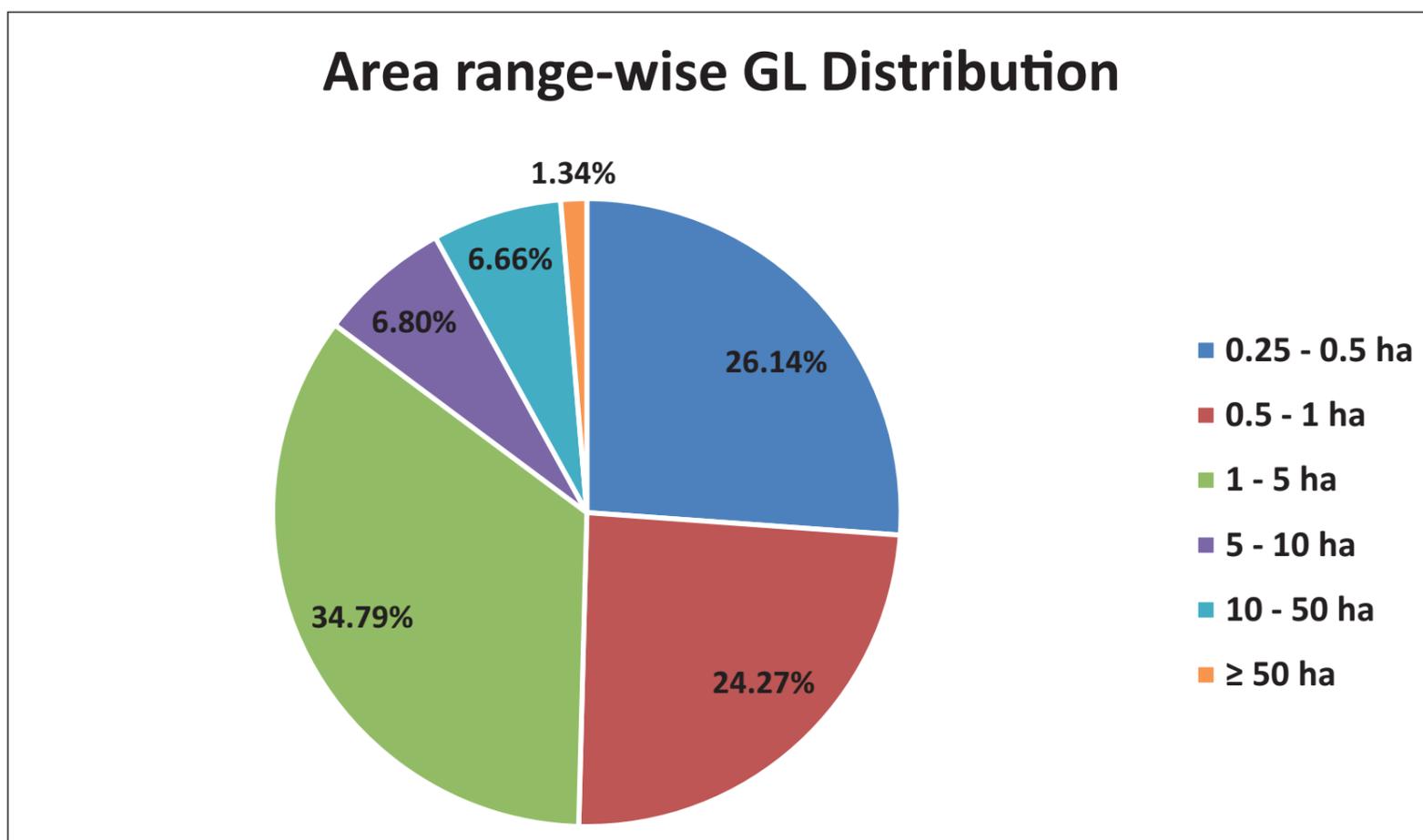
Figure 84: Area range-wise distribution of GL in Transboundary region

Type-wise Distribution

Distribution of different types of glacial lake in the transboundary region is given in Table 69 and Figure 85. All types of glacial lakes are present in the transboundary region, where Other Glacial Erosion lake is found to be the maximum with 1,665 (38.38%) occupying a total lake extent of 4,507.80 ha at 22.45% in the region. After that, Other Moraine Dammed and Supra-glacial lakes are in majority with 1,630 (37.57%) and 511 (11.78%) and extend over a total area of 4,357.83 ha (21.70%) and 487.57 ha (2.43%) respectively.

Table 69: Type-wise distribution of GL in Transboundary region

S. No.	Code	Types of Glacial Lake	No. of Lakes	Total Lake Area (ha)	(%)
1	M(e)	End-moraine Dammed Lake	236	8,444.57	42.05
2	M(l)	Lateral Moraine Dammed Lake	89	547.70	2.73
3	M(lg)	Lateral Moraine Dammed Lake with Ice	9	5.48	0.03
4	M(o)	Other Moraine Dammed Lake	1,630	4,357.83	21.70
5	I(s)	Supra-glacial Lake	511	487.57	2.43
6	I(d)	Glacier Ice-dammed Lake	1	2.45	0.01
7	E(c)	Cirque Erosion Lake	97	863.59	4.30
8	E(o)	Other Glacial Erosion Lake	1,665	4,507.80	22.45
9	O	Other Glacial Lake	100	864.35	4.30
		Total	**4,338**	**20,081.34**	**100.00**
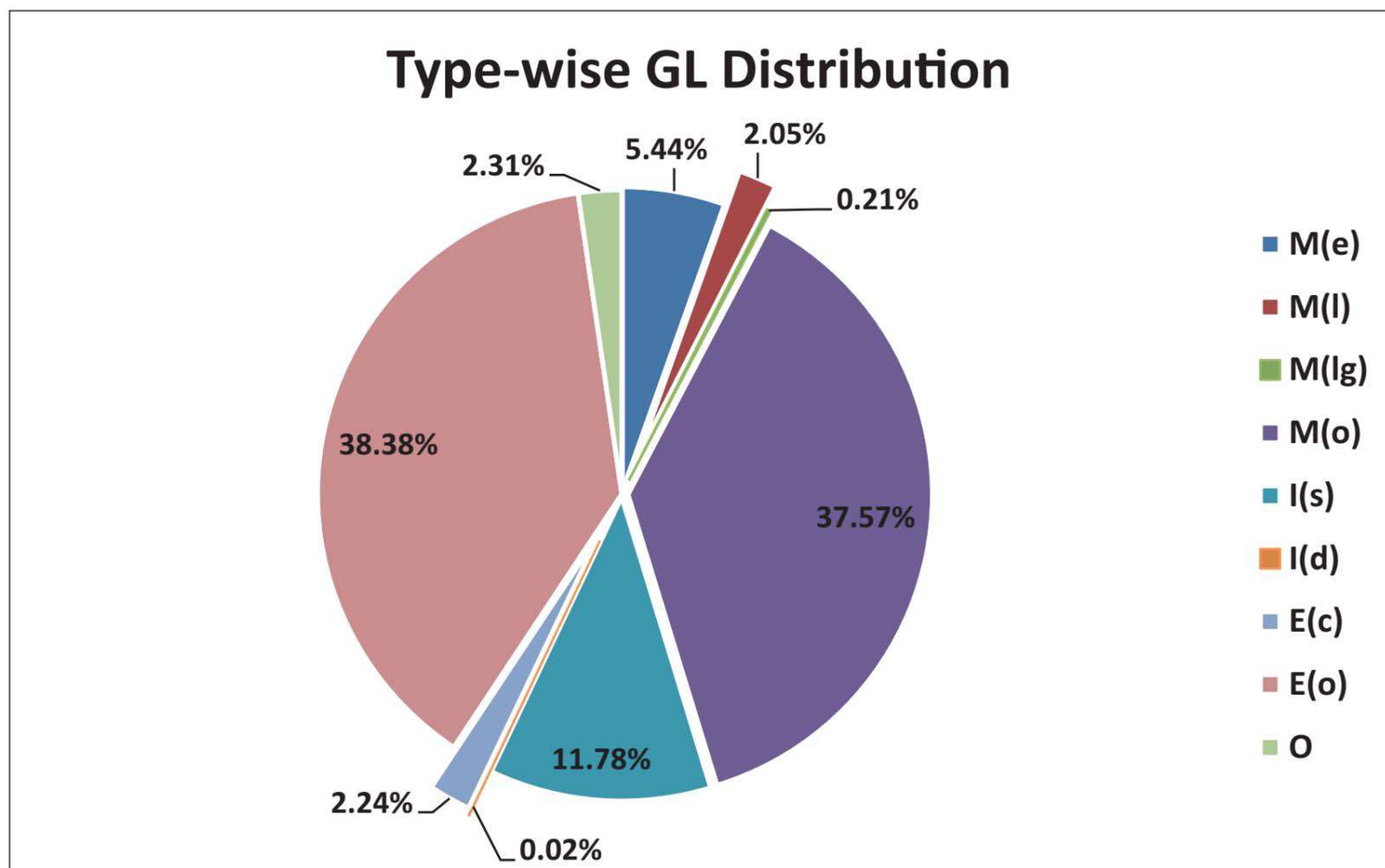
Figure 85: Type-wise distribution of GL in Transboundary region

Area range-Type-wise Distribution

Glacial lake distribution by area range vs. type-wise is given in Table 70 and Figure 86. The lakes with < 5 ha in size (85.20%) are dominant with Other Glacial Erosion (40.15%) and Other Moraine Dammed lakes (39.48%). Lakes with ≥ 5 ha (14.80%) are also dominated by Other Glacial Erosion lakes (28.19%). All types of Moraine-dammed lakes, which constitute about 45.27%, are majorly with < 5 ha in water spread.

Table 70: Area range-wise vs. Type-wise distribution of GL in Transboundary region

S. No.	Lake Area Range (ha)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	0.25 - 0.5	4	21	4	425	281	0	3	374	22	1,134
2	0.5 - 1	11	19	4	443	141	0	0	410	25	1,053
3	1 - 5	45	31	1	591	78	1	38	700	24	1,509
4	5 - 10	40	5	0	100	5	0	26	112	7	295
5	10 - 50	94	9	0	68	6	0	30	64	18	289
6	≥ 50	42	4	0	3	0	0	0	5	4	58
	Total	**236**	**89**	**9**	**1,630**	**511**	**1**	**97**	**1,665**	**100**	**4,338**
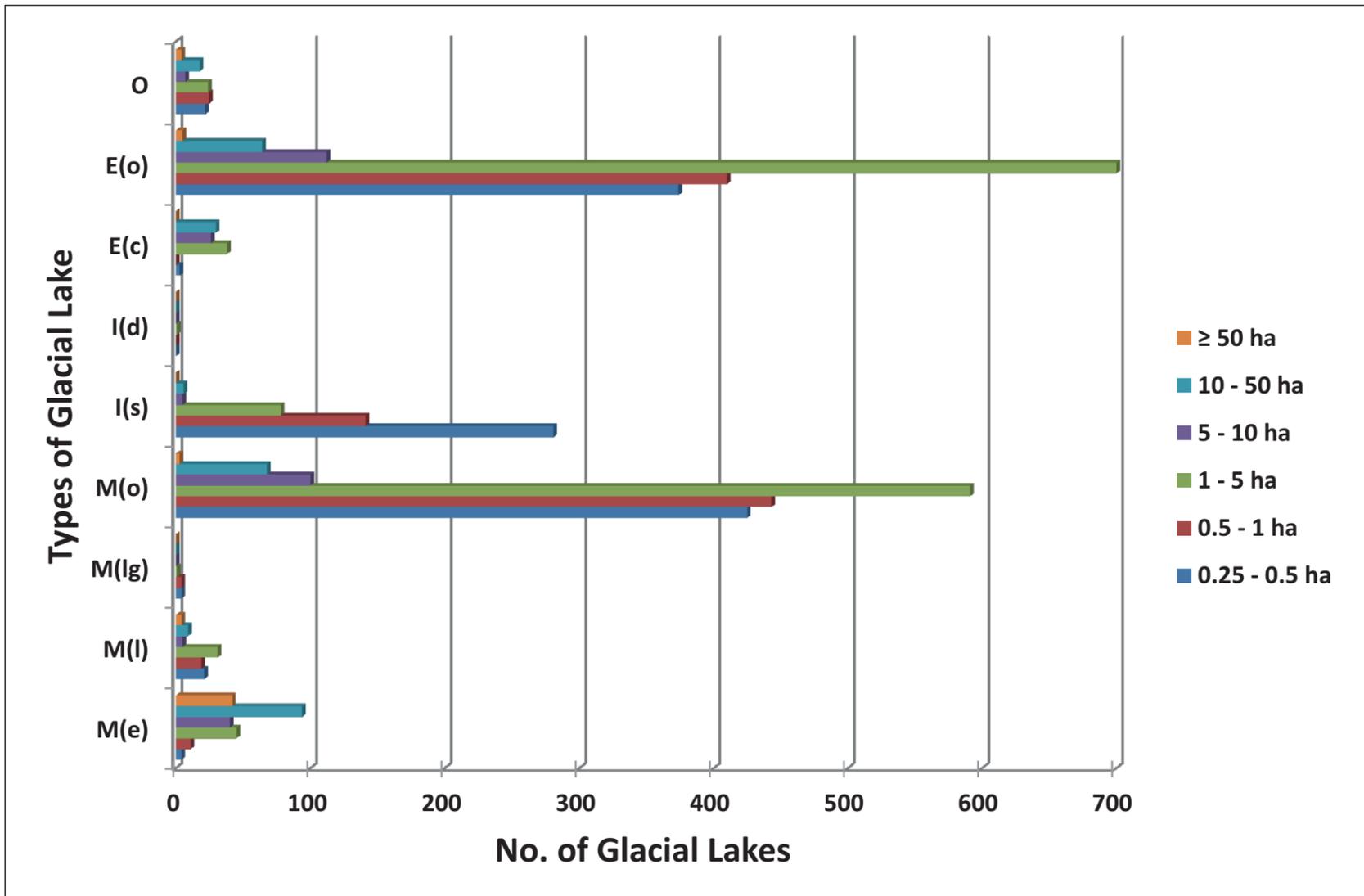
Figure 86: Area range-wise vs. Type-wise distribution of GL in Transboundary region

Elevation range-wise Distribution

Elevation range-wise distribution of the glacial lakes in the transboundary region has been shown in Table 71 and Figure 87. Majority of glacial lakes are situated above 4,000 m elevation range i.e. 4,286 (98.80%) with total lake area of 19,853.55 ha, contributing 98.87% of lake area.

Table 71: Elevation range-wise distribution of GL in Transboundary region

S. No.	Elevation Range (m)	No. of Lakes	Total Lake Area	
			(ha)	%
1	up to 3,000	1	9.87	0.05
2	3,001 - 4,000	51	217.92	1.08
3	4,001 - 5,000	1,653	6,976.20	34.74
4	> 5,000	2,633	12,877.35	64.13
Total		**4,338**	**20,081.34**	**100.00**
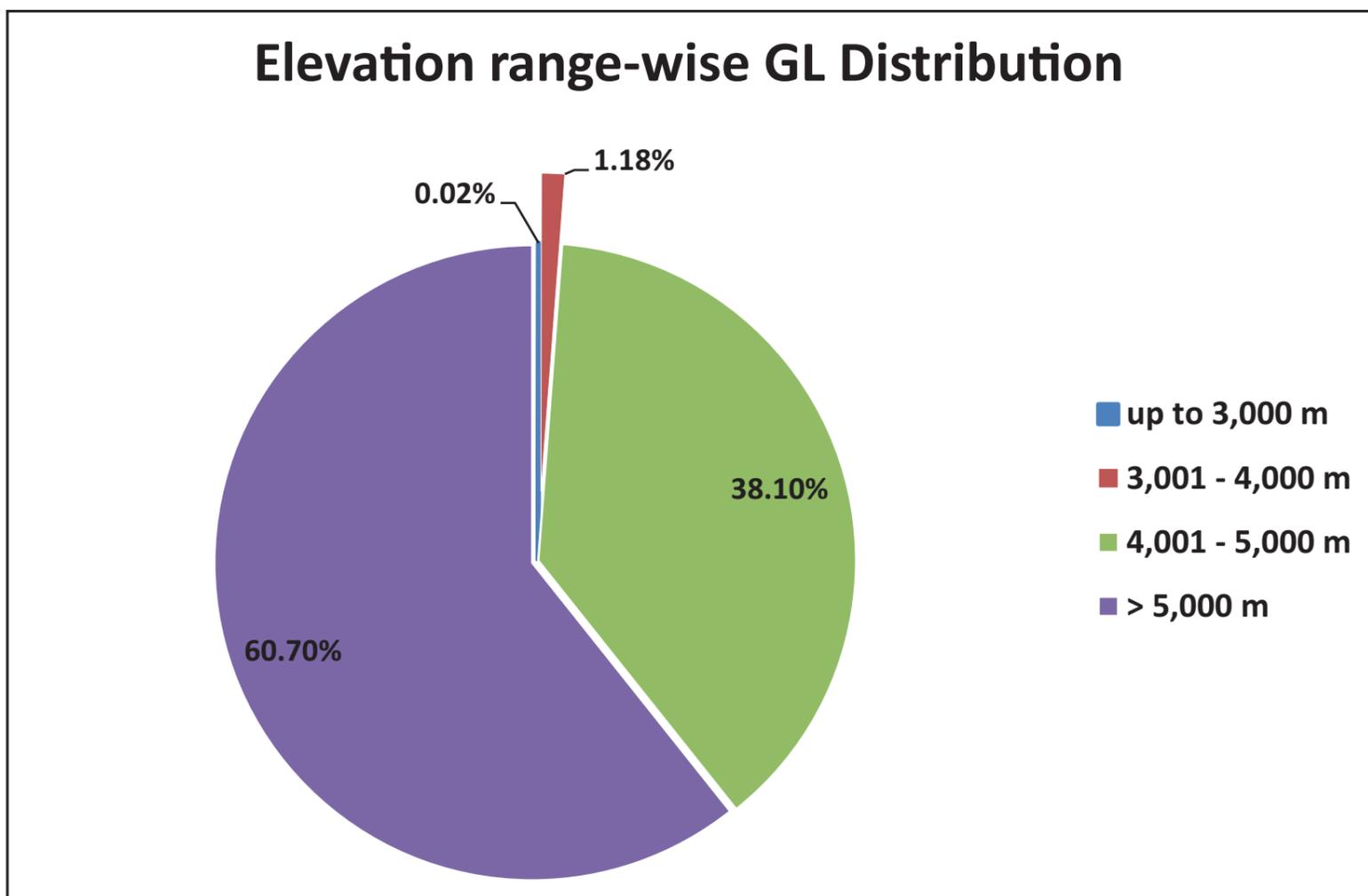
Figure 87: Elevation range-wise distribution of GL in Transboundary region

Area-Elevation range-wise Distribution

Glacial lake distribution has been analyzed as per area range vs. elevation range-wise, given in Table 72 and Figure 88. It is noted that, 60.70% of glacial lakes (2,633) are situated in very high altitude range i.e. > 5,000 m, which also constitutes majority of total lake area within that range i.e. 64.13%. However, 52 glacial lakes lies below 4,001 m, has 75.00% of its lakes < 5 ha in size. 85.95% of lakes lying in very high altitude range are < 5 ha, majorly of size ranging 1 - 5 ha (i.e. 881), followed by lakes of size 0.25 - 0.5 ha (i.e. 714). It has been further noticed that, 57.63% of lakes ≥ 5 ha are lying within in the very high altitude range, majority of them falling in size ranging of 5 - 10 ha.

Table 72: Area range-wise vs. Elevation range-wise distribution of GL in Transboundary region

| S. No. | Lake Area Range (ha) | Elevation Range (m) | | | | | | | | Total | |
| | | up to 3,000 | | 3,001 - 4,000 | | 4,001 - 5,000 | | > 5,000 | | | |
		No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Total Lake Area (ha)	No. of lakes	Lake Area (ha)
1	0.25 - 0.5	0	0.00	14	4.51	406	145.73	714	252.46	1,134	402.70
2	0.5 - 1	0	0.00	14	10.30	371	266.39	668	473.93	1,053	750.62
3	1 - 5	0	0.00	11	32.06	617	1,380.02	881	1,903.73	1,509	3,315.81
4	5 - 10	1	9.87	5	34.15	121	855.12	168	1,149.98	295	2,049.12
5	10 - 50	0	0.00	7	136.90	119	2,257.52	163	3,391.93	289	5,786.35
6	≥ 50	0	0.00	0	0.00	19	2,071.42	39	5,705.32	58	7,776.74
	Total	**1**	**9.87**	**51**	**217.92**	**1,653**	**6,976.20**	**2,633**	**12,877.35**	**4,338**	**20,081.34**
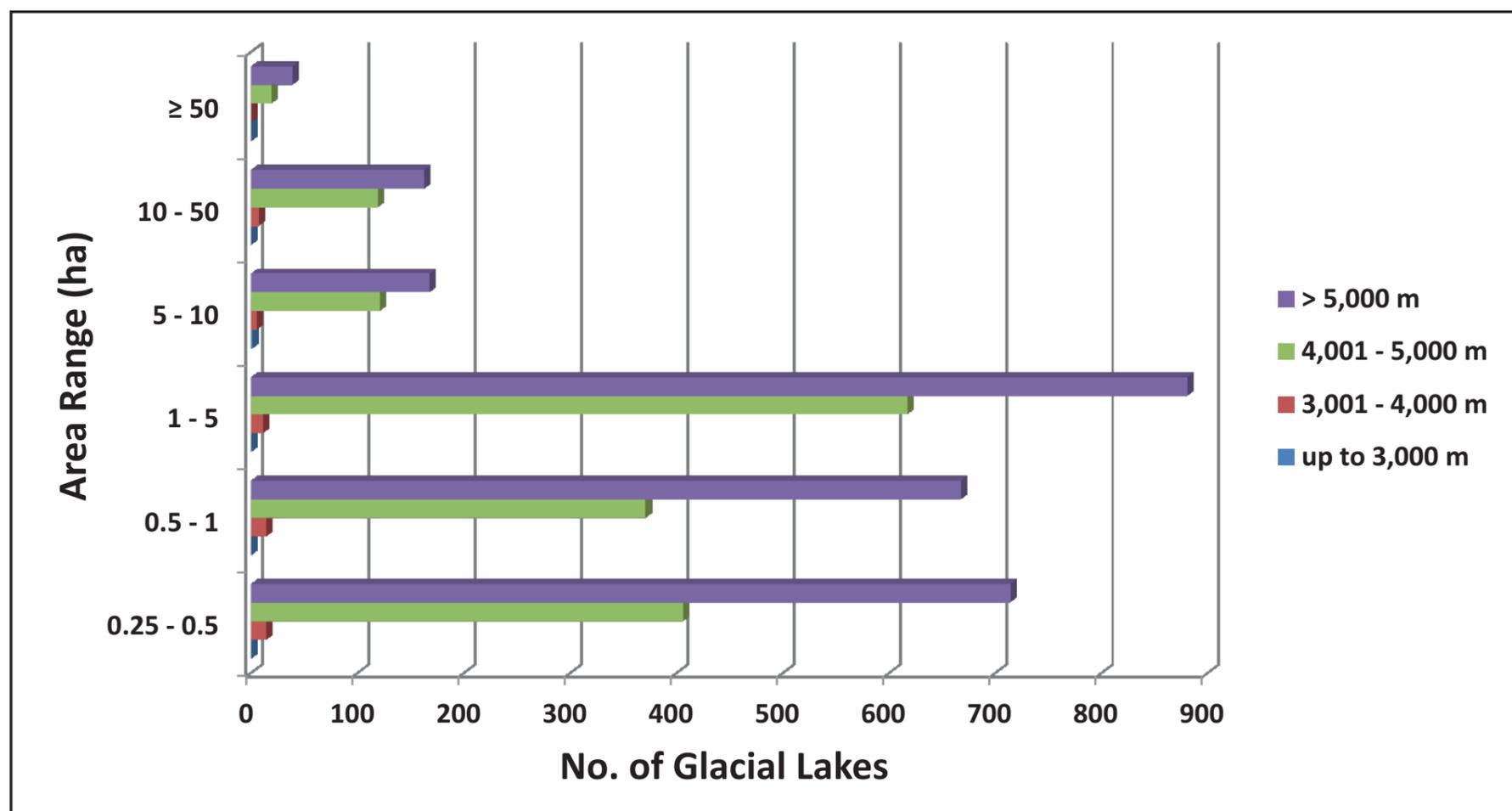
Figure 88: Area range-wise vs. Elevation range-wise distribution of GL in Transboundary region

Type-Elevation range-wise Distribution

Glacial lake distribution has also been analyzed as per type-wise vs. elevation range-wise, given in Table 73 and Figure 89. The dominant lake type in the subbasin i.e. Other Glacial Erosion lake (38.38%) is predominantly located in the elevation range 4,001 - 5,000 m (52.03%). The other dominant lake type, namely, Other Moraine Dammed and Supra-glacial lakes are also majorly distributed in very high altitude range > 5,000 m elevation range, i.e. 48.99% and 11.36%. Majority i.e. 76.58% of all types of Moraine-dammed lake lies in > 5,000 m.

Table 73: Elevation range-wise vs. Type-wise distribution of GL in Transboundary region

S. No.	Elevation Range (m)	Types of Glacial Lake									Total
		M(e)	M(l)	M(lg)	M(o)	I(s)	I(d)	E(c)	E(o)	O	
1	up to 3,000	0	0	0	0	0	0	0	1	0	1
2	3,001 - 4,000	3	1	0	6	14	0	1	22	4	51
3	4,001 - 5,000	68	47	1	334	198	0	78	860	67	1,653
4	> 5,000	165	41	8	1,290	299	1	18	782	29	2,633
	Total	**236**	**89**	**9**	**1,630**	**511**	**1**	**97**	**1,665**	**100**	**4,338**
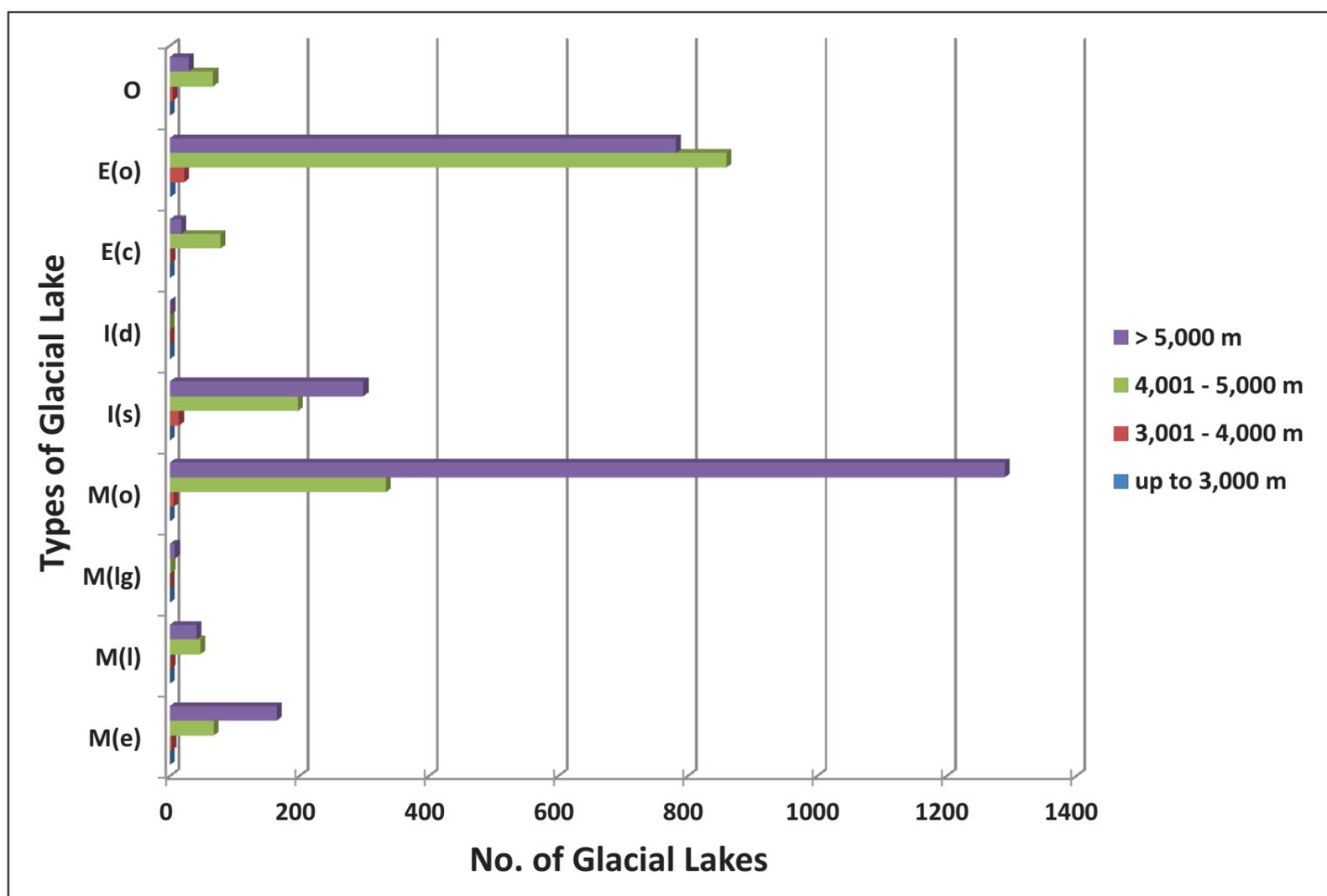
Figure 89: Elevation range-wise vs. Type-wise distribution of GL in Transboundary region
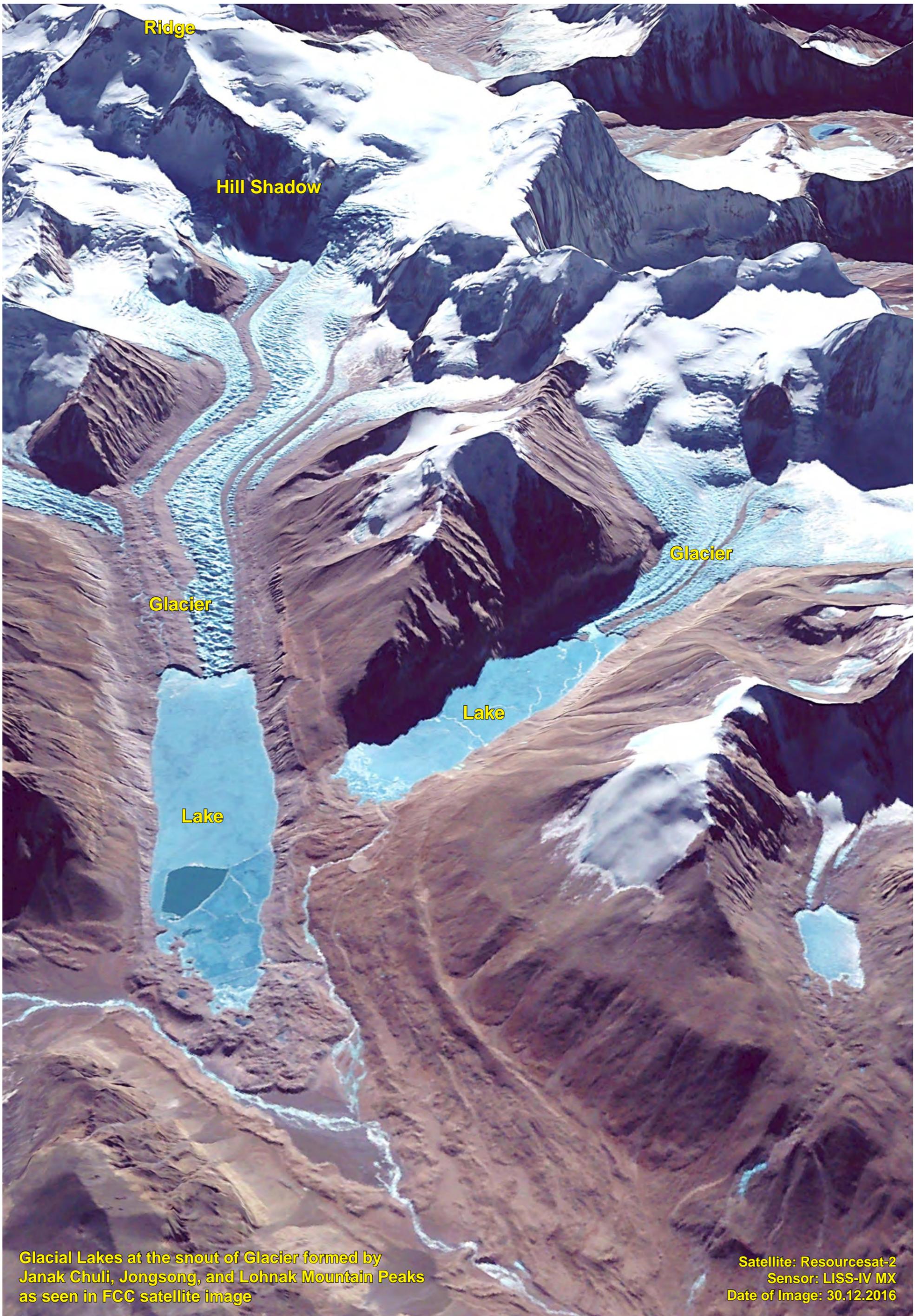
Ridge

Hill Shadow

Glacier

Glacier

Lake

Lake

Glacial Lakes at the snout of Glacier formed by
Janak Chuli, Jongsong, and Lohnak Mountain Peaks
as seen in FCC satellite image

Satellite: Resourcesat-2
Sensor: LISS-IV MX
Date of Image: 30.12.2016

6. INDEX OF MAP SHEETS

Figure 90 shows the layout map representing SOI 250K toposheets overlaid on satellite image acquisition year layer covering the Ganga River basin. A total of 42 toposheets covered the entire study area, of which 23 toposheets contain glacial lakes.
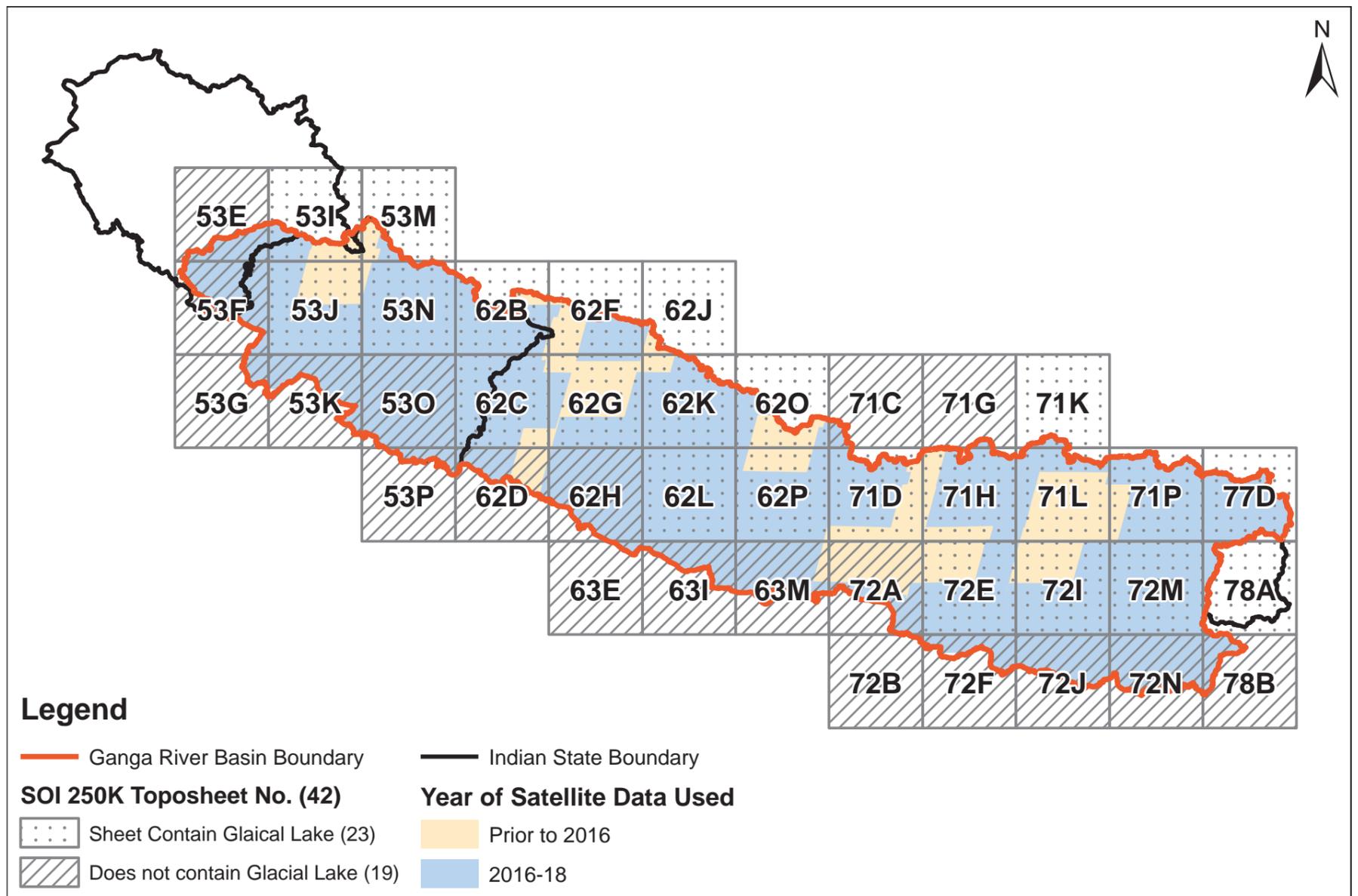
Figure 90: Layout of SOI 250K Toposheets and year of satellite data used

SATELLITE IMAGE OF PART OF GANGA BASIN

State: Himachal Pradesh, Uttarakhand   **Map 1**   **Plate No: 53I**

Lahul & Spiti

Kinnaur

Shimla

Yamuna

Uttarkashi

Upper Ganga

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 4)

0   5   10   20 Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake		
1	0.25 - 0.5	0	0	0	4	4	0	0	0	7	3	18
2	0.5 - 1	0	0	0	6	0	0	0	0	8	2	16
3	1 - 5	1	0	0	1	0	0	1	0	7	1	11
4	5 - 10	0	0	0	2	0	0	1	0	0	0	3
5	10 - 50	0	0	0	0	0	0	1	0	1	0	2
6	≥ 50	0	0	0	0	0	0	0	0	0	0	0
	Total	1	0	0	13	4	0	3	0	23	6	50

Legend

— Subbasin Boundary   --- District Boundary

DISCLAIMER:
(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose
(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

State: Himachal Pradesh, Uttarakhand   **Map 2**   **Plate No: 53I**

Lahul & Spiti

Kinnaur

Shimla

Yamuna

Uttarkashi

Upper Ganga

Data Source: Resourcesat-2 LISS-IV

0   5   10   20
Km

Distribution of Glacial Lake Types

● Moraine Dammed Lake ● Ice Dammed Lake ● Erosion Lake ● Other Glacial Lake

Location Map

India

Ganga Basin

53J 53N 53M
62C 62B 62F 62J
62G 62K
62O
62P
62L 62M
63M 63I
71D 71H
71L 71P 77D
63J 72A 74K
72E 72I 72M 78A
72F 72J 72N 78B

Subbasins

Bhagmati	Ramganga
Gandak	Rapti
Ghaghara	Sarda
Kamla	Upper Ganga
Kosi	Yamuna
Lower Ganga	

Plate Nos. with GREY annotation does not have Glacial Lakes.
Corresponding Mapsheets not provided.
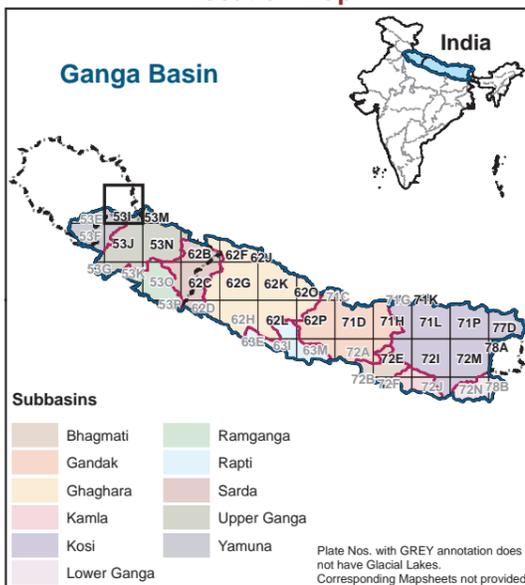
Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	5	2.5
3	4,001 - 5,000	36	76.6
4	> 5,000	9	5.5
	Total	50	84.6

Legend

Glacial Lake	*Disrict Boundary*	**Elevation Range (m)**
River / Stream	State / UT Boundary	up to 3,000
Basin Boundary	International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

State: Uttarakhand **Map 3** **Plate No: 53J**

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 6)

0   5   10   20
Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake				
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake	Other Glacial Lake	
1	0.25 - 0.5	0	0	0	1	1	0	0	0	0	0	2
2	0.5 - 1	1	1	0	4	0	0	1	0	2	0	9
3	1 - 5	0	1	0	0	1	0	1	0	6	1	10
4	5 - 10	0	1	0	0	0	0	0	0	3	0	4
5	10 - 50	1	0	0	0	0	0	0	0	0	0	1
6	≥ 50	0	0	0	0	0	0	0	0	0	0	0
	Total	2	3	0	5	2	0	2	0	11	1	26

Legend

〰 **Subbasin Boundary**   - - - - **District Boundary**

DISCLAIMER:
(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose
(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

State: Uttarakhand Map 4 **Plate No: 53J**

Yamuna

Uttarkashi

Tehri Garhwal

Upper Ganga

Rudraprayag

Dehra Dun

Garhwal

Haridwar

Data Source: Resourcesat-2 LISS-IV

0   5   10   20 Km

Distribution of Glacial Lake Types

● Moraine Dammed Lake   ● Ice Dammed Lake   ● Erosion Lake   ● Other Glacial Lake

Location Map

India

Ganga Basin

Subbasins

Bhagmati
Gandak
Ghaghara
Kamla
Kosi
Lower Ganga

Ramganga
Rapti
Sarda
Upper Ganga
Yamuna

Plate Nos. with GREY annotation does
not have Glacial Lakes.
Corresponding Mapsheets not provided.

Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	1	1.1
3	4,001 - 5,000	25	80.4
4	> 5,000	0	0.0
	Total	26	81.5

Legend

Glacial Lake	- - - *District Boundary*	**Elevation Range (m)**
River / Stream	-·-·- State / UT Boundary	up to 3,000
Basin Boundary	—— International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

State: Uttarakhand	Map 5	Plate No: 53M

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 3)

0   5   10   20
Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake		
1	0.25 - 0.5	0	0	0	11	0	0	0	0	3	1	15
2	0.5 - 1	0	1	0	8	1	0	2	0	3	2	17
3	1 - 5	8	0	0	9	0	0	2	0	3	1	23
4	5 - 10	1	0	0	0	0	0	0	0	0	0	1
5	10 - 50	0	0	0	0	0	0	0	0	0	0	0
6	≥ 50	0	0	0	0	0	0	0	0	0	0	0
	Total	9	1	0	28	1	0	4	0	9	4	56

Legend

— Subbasin Boundary   - - - District Boundary

DISCLAIMER:

(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

State: Uttarakhand	Map 6	Plate No: 53M

Data Source: Resourcesat-2 LISS-IV

Uttarkashi

Upper Ganga

Kinnaur

Chamoli

0   5   10   20 Km

Distribution of Glacial Lake Types

Moraine Dammed Lake   Ice Dammed Lake   Erosion Lake   Other Glacial Lake

Location Map

India

Ganga Basin

Plate Nos. with GREY annotation does not have Glacial Lakes.
Corresponding Mapsheets not provided.

Subbasins

Bhagmati
Gandak
Ghaghara
Kamla
Kosi
Lower Ganga
Ramganga
Rapti
Sarda
Upper Ganga
Yamuna

Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	0	0.0
3	4,001 - 5,000	0	0.0
4	> 5,000	56	78.9
	Total	56	78.9

Legend

Glacial Lake
River / Stream
Basin Boundary
Subbasin Boundary

District Boundary
State / UT Boundary
International Boundary

Elevation Range (m)
up to 3,000
3,001 - 4,000
4,001 - 5,000
> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

State: Uttarakhand **Map 7** **Plate No: 53N**

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 7)

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake		
1	0.25 - 0.5	1	1	0	17	65	0	1	0	13	1	99
2	0.5 - 1	0	3	0	17	23	0	2	0	8	0	53
3	1 - 5	4	3	0	9	4	0	6	0	6	0	32
4	5 - 10	0	0	0	3	1	0	5	0	0	0	9
5	10 - 50	2	0	0	0	2	0	0	0	0	0	4
6	≥ 50	0	0	0	0	0	0	0	0	0	0	0
	Total	7	7	0	46	95	0	14	0	27	1	197

Legend

⎯⎯ **Subbasin Boundary**   - - - - **District Boundary**

DISCLAIMER:

(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

State: Uttarakhand　　　　　**Map 8**　　　　　**Plate No: 53N**

Data Source: Resourcesat-2 LISS-IV

0　5　10　20
Km

Distribution of Glacial Lake Types

● Moraine Dammed Lake　● Ice Dammed Lake　● Erosion Lake　● Other Glacial Lake

Location Map

India

Ganga Basin

Subbasins

Bhagmati
Gandak
Ghaghara
Kamla
Kosi
Lower Ganga

Ramganga
Rapti
Sarda
Upper Ganga
Yamuna

Plate Nos. with GREY annotation does
not have Glacial Lakes.
Corresponding Mapsheets not provided.

Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	2	1.2
3	4,001 - 5,000	118	168.2
4	> 5,000	77	93.8
	Total	197	263.1
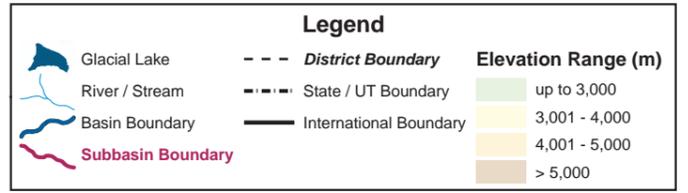
Legend

🐳 Glacial Lake	- - - *District Boundary*	**Elevation Range (m)**	
River / Stream	State / UT Boundary		up to 3,000
Basin Boundary	International Boundary		3,001 - 4,000
Subbasin Boundary			4,001 - 5,000
			> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

State: Uttarakhand	Map 9	Plate No: 62B

Chamoli

Upper Ganga

Ghaghara

Pithoragarh

Sarda

Bageshwar

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 6)

0   5   10   20
Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake		
1	0.25 - 0.5	0	1	0	8	3	0	0	0	5	1	18
2	0.5 - 1	0	0	0	8	1	0	0	0	3	0	12
3	1 - 5	2	2	0	10	0	0	2	0	6	0	22
4	5 - 10	0	1	0	1	0	0	2	0	0	0	4
5	10 - 50	4	0	0	0	0	0	0	0	1	0	5
6	≥ 50	0	0	0	0	0	0	0	0	0	0	0
	Total	6	4	0	27	4	0	4	0	15	1	61

Legend

⌇ Subbasin Boundary   --- District Boundary

DISCLAIMER:
(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose
(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

State: Uttarakhand	Map 10	Plate No: 62B

Chamoli

Upper Ganga

Ghaghara

Pithoragarh

Sarda

Bageshwar

Data Source: Resourcesat-2 LISS-IV

0 5 10 20
Km

Distribution of Glacial Lake Types

- ● Moraine Dammed Lake
- ● Ice Dammed Lake
- ● Erosion Lake
- ● Other Glacial Lake

Location Map

India

Ganga Basin

53I 53M
53J 53N
62B 62F 62J
62C 62G 62K
62D 62O
62H 62L 62P 71D 71H 71L 71P 77D
63M 72A 72E 72I 72M 78A
63I 72B 72F 72J 72N 78B

Subbasins

- Bhagmati
- Gandak
- Ghaghara
- Kamla
- Kosi
- Lower Ganga
- Ramganga
- Rapti
- Sarda
- Upper Ganga
- Yamuna

Plate Nos. with GREY annotation does
not have Glacial Lakes.
Corresponding Mapsheets not provided.

Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	3	0.9
3	4,001 - 5,000	28	85.5
4	> 5,000	30	96.9
	Total	61	183.4

Legend

Glacial Lake	District Boundary	**Elevation Range (m)**	
River / Stream	State / UT Boundary		up to 3,000
Basin Boundary	International Boundary		3,001 - 4,000
Subbasin Boundary			4,001 - 5,000
			> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

State: Uttarakhand	Map 11	Plate No: 62C

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 7)

0   5   10   20 Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake				
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake	Other Glacial Lake	
1	0.25 - 0.5	0	0	0	1	0	0	0	0	1	0	2
2	0.5 - 1	0	0	0	1	0	0	0	0	0	0	1
3	1 - 5	0	1	0	0	0	0	0	0	2	0	3
4	5 - 10	0	0	0	0	0	0	0	0	0	0	0
5	10 - 50	0	0	0	0	0	0	0	0	0	0	0
6	≥ 50	0	0	0	0	0	0	0	0	0	0	0
	Total	0	1	0	2	0	0	0	0	3	0	6

Legend

⌇⌇ Subbasin Boundary   - - - District Boundary

DISCLAIMER:

(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

State: Uttarakhand	Map 12	Plate No: 62C

Bageshwar

Pithoragarh

Sarda

Ghaghara

Champawat

Udham Singh Nagar

Data Source: Resourcesat-2 LISS-IV

0 5 10 20 Km

Distribution of Glacial Lake Types

Moraine Dammed Lake • Ice Dammed Lake • Erosion Lake • Other Glacial Lake

Location Map

India

Ganga Basin

Subbasins

Bhagmati	Ramganga
Gandak	Rapti
Ghaghara	Sarda
Kamla	Upper Ganga
Kosi	Yamuna
Lower Ganga	

Plate Nos. with GREY annotation does not have Glacial Lakes.
Corresponding Mapsheets not provided.

Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	0	0.0
3	4,001 - 5,000	6	9.2
4	> 5,000	0	0.0
	Total	6	9.2

Legend

Glacial Lake	District Boundary	**Elevation Range (m)**
River / Stream	State / UT Boundary	up to 3,000
Basin Boundary	International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

State: Uttarakhand	Map 13	Plate No: 62F

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 5)

0   5   10   20 Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake		
1	0.25 - 0.5	0	4	0	37	16	0	0	0	27	4	88
2	0.5 - 1	3	3	1	42	11	0	0	0	21	2	83
3	1 - 5	10	7	1	50	7	0	2	0	30	7	114
4	5 - 10	9	0	0	9	0	0	2	0	2	0	22
5	10 - 50	15	0	0	6	0	0	0	0	5	5	31
6	≥ 50	1	0	0	0	0	0	0	0	0	0	1
	Total	38	14	2	144	34	0	4	0	85	18	339

Legend

⟋ **Subbasin Boundary**   - - - - *District Boundary*

DISCLAIMER:

(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

State: Uttarakhand	Map 14	Plate No: 62F

Data Source: Resourcesat-2 LISS-IV

0   5   10   20
Km

Distribution of Glacial Lake Types

- ● Moraine Dammed Lake
- ● Ice Dammed Lake
- ● Erosion Lake
- ● Other Glacial Lake

Location Map

India

Ganga Basin

Subbasins

Bhagmati	Ramganga
Gandak	Rapti
Ghaghara	Sarda
Kamla	Upper Ganga
Kosi	Yamuna
Lower Ganga	

Plate Nos. with GREY annotation does not have Glacial Lakes. Corresponding Mapsheets not provided.

Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	0	0.0
3	4,001 - 5,000	80	185.0
4	> 5,000	259	908.7
	Total	339	1,093.7

Legend

◆ Glacial Lake	– – – District Boundary	**Elevation Range (m)**
River / Stream	State / UT Boundary	up to 3,000
Basin Boundary	International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

Transboundary Region	Map 15	Plate No: 62G

Sarda

Ghaghara

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 7)

0   5   10   20 Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake		
1	0.25 - 0.5	0	0	0	4	3	0	1	0	13	0	21
2	0.5 - 1	0	1	0	8	3	0	0	0	11	2	25
3	1 - 5	1	0	0	9	2	0	3	0	18	0	33
4	5 - 10	0	1	0	2	0	0	1	0	2	0	6
5	10 - 50	3	0	0	0	0	0	2	0	2	0	7
6	≥ 50	0	0	0	0	0	0	0	0	0	0	0
	Total	4	2	0	23	8	0	7	0	46	2	92

Legend

〰️ **Subbasin Boundary**   - - - *District Boundary*

DISCLAIMER:

(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

Transboundary Region	Map 16	Plate No: 62G

Sarda

Ghaghara

Data Source: Resourcesat-2 LISS-IV

0   5   10   20
Km

Distribution of Glacial Lake Types

● Moraine Dammed Lake   ● Ice Dammed Lake   ● Erosion Lake   ● Other Glacial Lake

Location Map

India

Ganga Basin

Plate Nos. with GREY annotation does not have Glacial Lakes. Corresponding Mapsheets not provided.

Subbasins

Bhagmati	Ramganga
Gandak	Rapti
Ghaghara	Sarda
Kamla	Upper Ganga
Kosi	Yamuna
Lower Ganga	

Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	4	31.7
3	4,001 - 5,000	76	227.2
4	> 5,000	12	20.6
	Total	92	279.6

Legend

Glacial Lake	District Boundary	**Elevation Range (m)**
River / Stream	State / UT Boundary	up to 3,000
Basin Boundary	International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

Transboundary Region	Map 17	Plate No: 62J

Ghaghara

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 2)

0   5   10   20 Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake		
1	0.25 - 0.5	0	2	0	13	9	0	0	0	5	0	29
2	0.5 - 1	1	0	0	8	1	0	0	0	4	0	14
3	1 - 5	1	0	0	19	0	0	0	0	5	0	25
4	5 - 10	1	1	0	3	0	0	1	0	0	0	6
5	10 - 50	0	1	0	0	0	0	0	0	0	0	1
6	≥ 50	0	1	0	0	0	0	0	0	0	0	1
	Total	3	5	0	43	10	0	1	0	14	0	76

Legend

⌇ **Subbasin Boundary**   - - - - *District Boundary*

DISCLAIMER:

(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

Transboundary Region	Map 18	Plate No: 62J
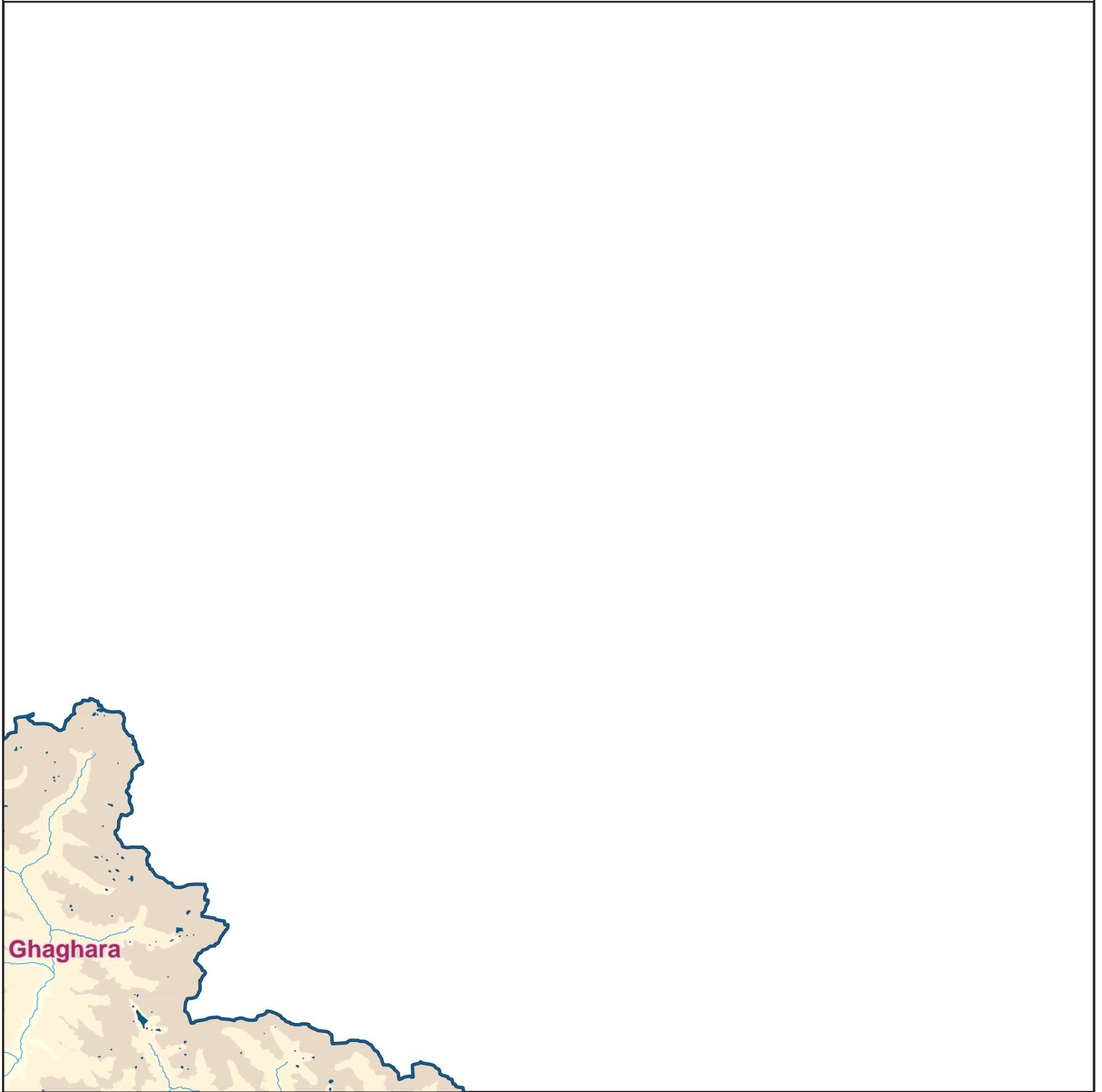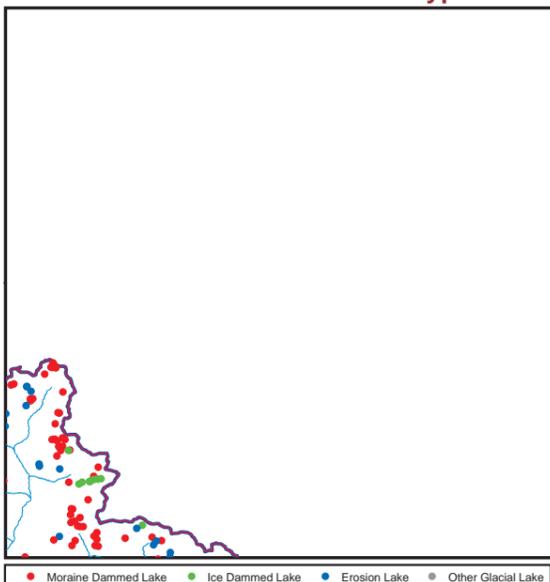
Ghaghara

Data Source: Resourcesat-2 LISS-IV

0 5 10 20 Km

Distribution of Glacial Lake Types

- ● Moraine Dammed Lake
- ● Ice Dammed Lake
- ● Erosion Lake
- ● Other Glacial Lake

Location Map

India

Ganga Basin

53J 53N
62B 62F 62J
62C 62G 62K
62O
62H 62L 62P 71D 71H 71L 71P 77D
62I 71K
72A 72E 72I 72M 78A
72B 72F 72J 72N 78B

Subbasins

Bhagmati		Ramganga
Gandak		Rapti
Ghaghara		Sarda
Kamla		Upper Ganga
Kosi		Yamuna
Lower Ganga		

Plate Nos. with GREY annotation does not have Glacial Lakes.
Corresponding Mapsheets not provided.
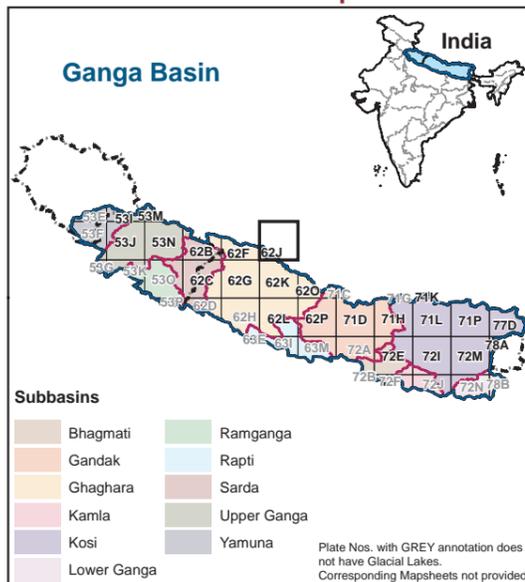
Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	0	0.0
3	4,001 - 5,000	19	96.2
4	> 5,000	57	103.0
	Total	76	199.2

Legend

🔷	Glacial Lake	- - -	District Boundary		Elevation Range (m)
	River / Stream	-·-·-	State / UT Boundary		up to 3,000
	Basin Boundary	———	International Boundary		3,001 - 4,000
	Subbasin Boundary				4,001 - 5,000
					> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

Transboundary Region	Map 19	Plate No: 62K

Ghaghara

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 4)

0   5   10   20
Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake		
1	0.25 - 0.5	2	0	0	46	14	0	0	0	63	1	126
2	0.5 - 1	2	1	1	55	4	0	0	0	60	4	127
3	1 - 5	2	0	0	43	0	0	2	0	111	1	159
4	5 - 10	1	0	0	5	0	0	4	0	28	1	39
5	10 - 50	3	2	0	8	0	0	7	0	15	1	36
6	≥ 50	0	0	0	0	0	0	0	0	0	0	0
	Total	10	3	1	157	18	0	13	0	277	8	487

Legend

〜 **Subbasin Boundary**   - - - - *District Boundary*

DISCLAIMER:

(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

Transboundary Region | **Map 20** | **Plate No: 62K**

Ghaghara

Data Source: Resourcesat-2 LISS-IV

0 5 10 20
Km

Distribution of Glacial Lake Types

- Moraine Dammed Lake
- Ice Dammed Lake
- Erosion Lake
- Other Glacial Lake

Location Map

India

Ganga Basin

53E 53I 53M
53J 53N
62B 62F 62J
62C 62G 62K
53O 62O 62N
62D 62L 62P 71D 71H 71L 71P 77D
63M 72A 77A
72E 72I 72M
63N 72F 72J 72N
72B 72N 78B

Subbasins

- Bhagmati
- Gandak
- Ghaghara
- Kamla
- Kosi
- Lower Ganga
- Ramganga
- Rapti
- Sarda
- Upper Ganga
- Yamuna

Plate Nos. with GREY annotation does not have Glacial Lakes.
Corresponding Mapsheets not provided.
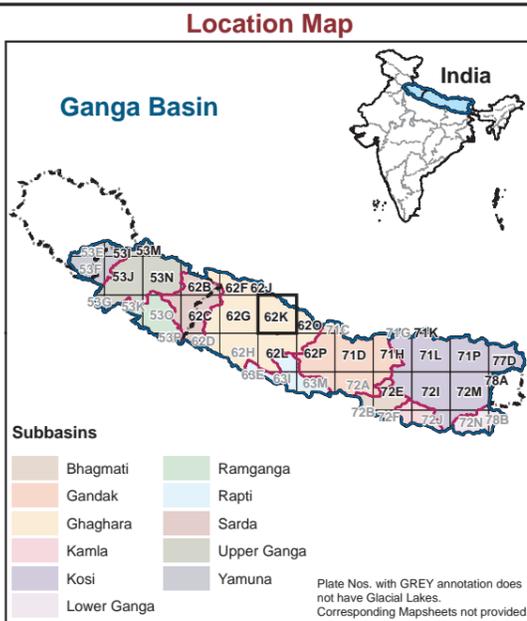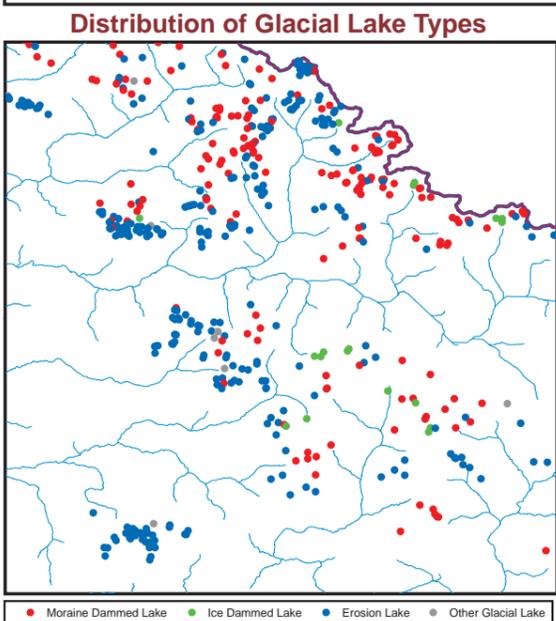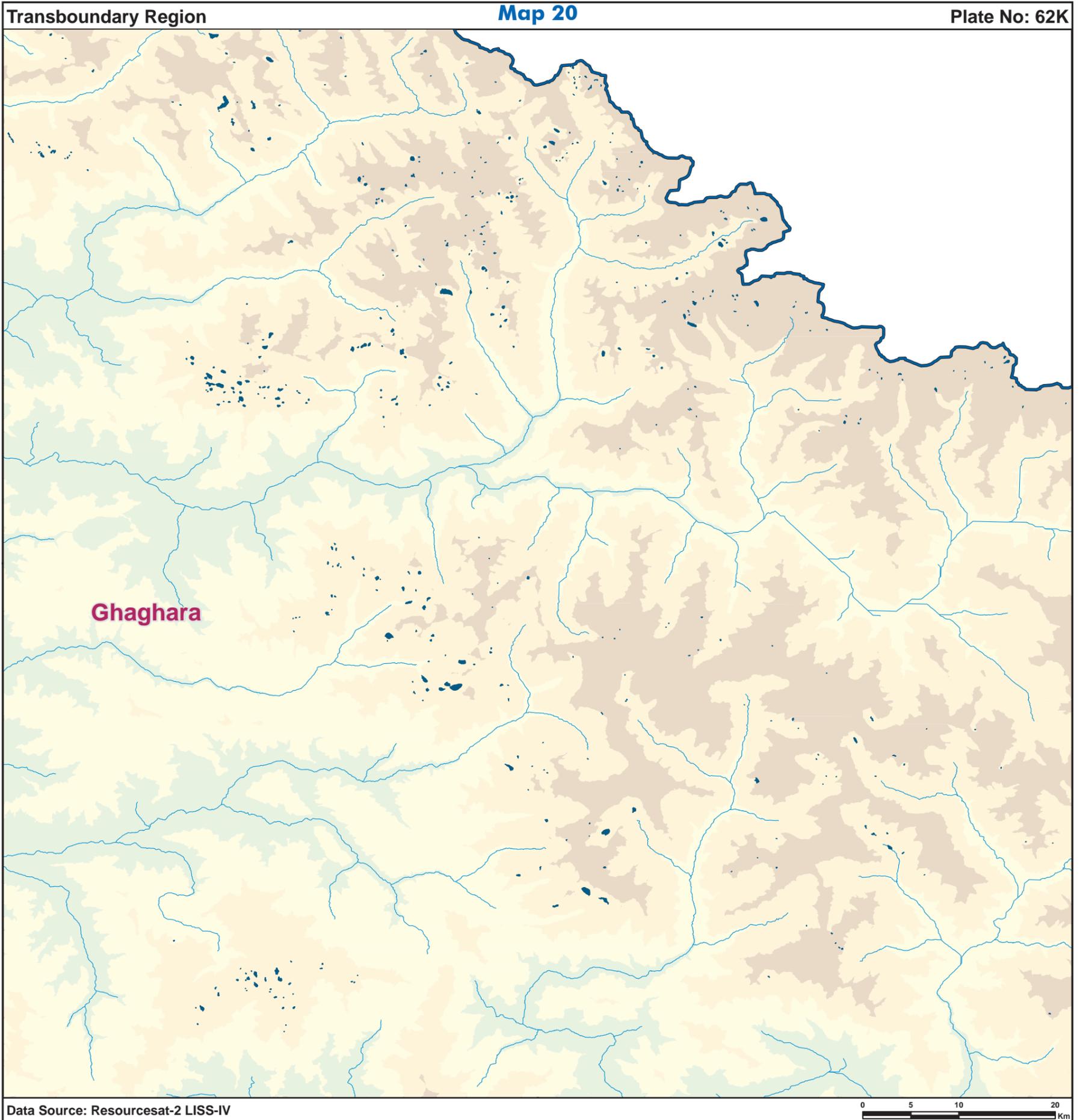
Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	4	27.2
3	4,001 - 5,000	336	1,165.4
4	> 5,000	147	207.8
	Total	**487**	**1,400.4**
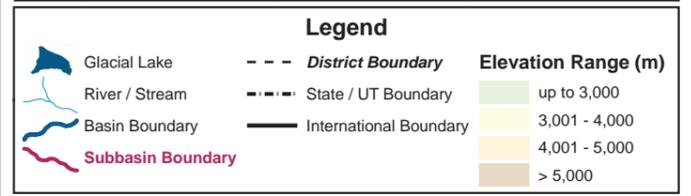
Legend

- Glacial Lake
- River / Stream
- Basin Boundary
- Subbasin Boundary
- District Boundary
- State / UT Boundary
- International Boundary

Elevation Range (m)
- up to 3,000
- 3,001 - 4,000
- 4,001 - 5,000
- > 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

Transboundary Region | **Map 21** | **Plate No: 62L**

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 5)

0   5   10   20
Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake				
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake	Other Glacial Lake	
1	0.25 - 0.5	0	0	0	2	0	0	0	0	1	0	3
2	0.5 - 1	0	0	0	0	0	0	0	0	2	0	2
3	1 - 5	0	0	0	3	0	0	0	0	4	0	7
4	5 - 10	0	0	0	0	0	0	0	0	0	0	0
5	10 - 50	0	0	0	0	0	0	1	0	1	0	2
6	≥ 50	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	5	0	0	1	0	8	0	14

Legend

⌇ **Subbasin Boundary**   - - - - **District Boundary**

DISCLAIMER:

(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

Transboundary Region **Map 22** **Plate No: 62L**

Data Source: Resourcesat-2 LISS-IV

| 0 | 5 | 10 | 20 |
Km

Distribution of Glacial Lake Types

● Moraine Dammed Lake ● Ice Dammed Lake ● Erosion Lake ● Other Glacial Lake

Location Map

India

Ganga Basin

Subbasins

Bhagmati	Ramganga
Gandak	Rapti
Ghaghara	Sarda
Kamla	Upper Ganga
Kosi	Yamuna
Lower Ganga	

Plate Nos. with GREY annotation does not have Glacial Lakes.
Corresponding Mapsheets not provided.

Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	0	0.0
3	4,001 - 5,000	14	40.6
4	> 5,000	0	0.0
	Total	14	40.6

Legend

Glacial Lake	District Boundary	**Elevation Range (m)**
River / Stream	State / UT Boundary	up to 3,000
Basin Boundary	International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

Transboundary Region	Map 23	Plate No: 62O

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 5)

| 0 | 5 | 10 | 20 |
Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake				
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake	Other Glacial Lake	
1	0.25 - 0.5	0	0	3	23	7	0	0	0	25	3	61
2	0.5 - 1	0	0	1	30	3	0	0	0	27	2	63
3	1 - 5	1	0	0	30	3	0	1	0	58	1	94
4	5 - 10	1	0	0	3	0	0	0	0	7	0	11
5	10 - 50	2	0	0	3	0	0	0	0	1	1	7
6	≥ 50	0	0	0	0	0	0	0	0	0	0	0
	Total	4	0	4	89	13	0	1	0	118	7	236

Legend
— Subbasin Boundary   ---- District Boundary

DISCLAIMER:
(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose
(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

Transboundary Region	Map 24	Plate No: 62O
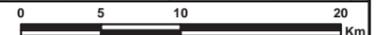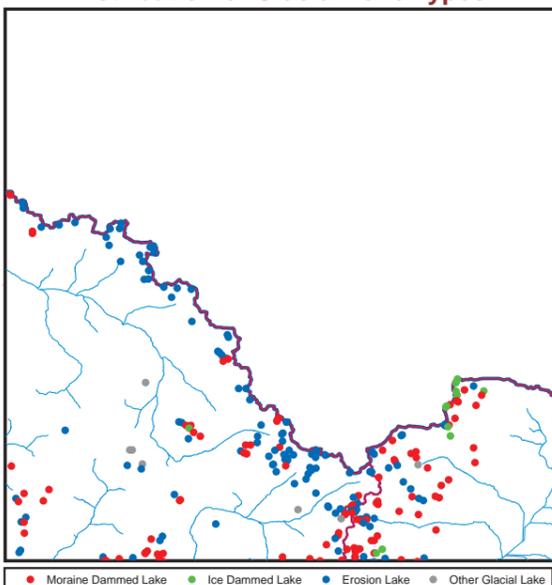
Ghaghara

Gandak

Data Source: Resourcesat-2 LISS-IV

0   5   10   20
Km

Distribution of Glacial Lake Types

Moraine Dammed Lake   Ice Dammed Lake   Erosion Lake   Other Glacial Lake

Location Map

India

Ganga Basin

Subbasins

Bhagmati		Ramganga	
Gandak		Rapti	
Ghaghara		Sarda	
Kamla		Upper Ganga	
Kosi		Yamuna	
Lower Ganga			

Plate Nos. with GREY annotation does
not have Glacial Lakes.
Corresponding Mapsheets not provided.
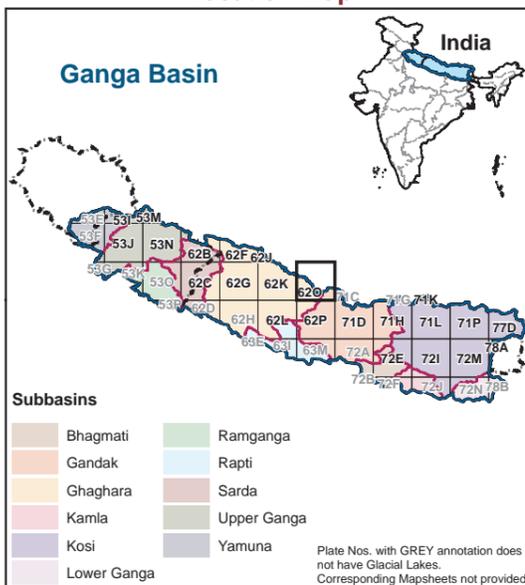
Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	0	0.0
3	4,001 - 5,000	10	31.9
4	> 5,000	226	440.8
	Total	236	472.7
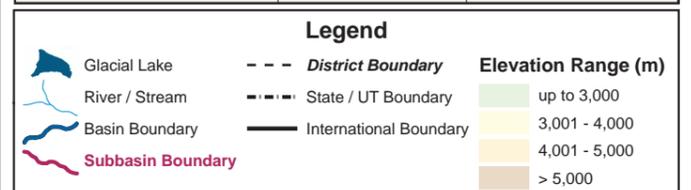
Legend

Glacial Lake	District Boundary	**Elevation Range (m)**
River / Stream	State / UT Boundary	up to 3,000
Basin Boundary	International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

Transboundary Region   **Map 25**   Plate No: 62P

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 6)

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake		
1	0.25 - 0.5	0	1	1	25	4	0	0	0	9	1	41
2	0.5 - 1	0	2	1	33	6	0	0	0	7	0	49
3	1 - 5	4	3	0	44	0	0	0	0	18	0	69
4	5 - 10	3	1	0	1	0	0	0	0	0	0	5
5	10 - 50	5	0	0	0	0	0	0	0	1	0	6
6	≥ 50	0	0	0	1	0	0	0	0	0	0	1
	Total	12	7	2	104	10	0	0	0	35	1	171

Legend

〜〜 **Subbasin Boundary**   – – – **District Boundary**

DISCLAIMER:

(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

Transboundary Region | **Map 26** | **Plate No: 62P**

Ghaghara

Gandak

Rapti

Data Source: Resourcesat-2 LISS-IV

0 5 10 20 Km

Distribution of Glacial Lake Types

● Moraine Dammed Lake ● Ice Dammed Lake ● Erosion Lake ● Other Glacial Lake

Location Map

Ganga Basin

India

Subbasins

Bhagmati | Ramganga
Gandak | Rapti
Ghaghara | Sarda
Kamla | Upper Ganga
Kosi | Yamuna
Lower Ganga

Plate Nos. with GREY annotation does not have Glacial Lakes. Corresponding Mapsheets not provided.
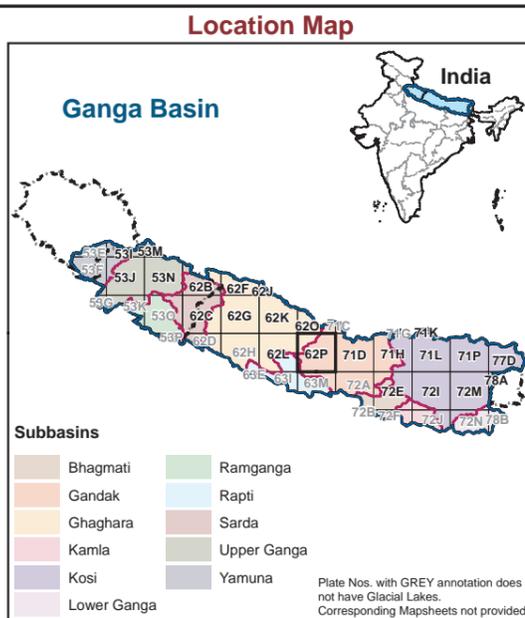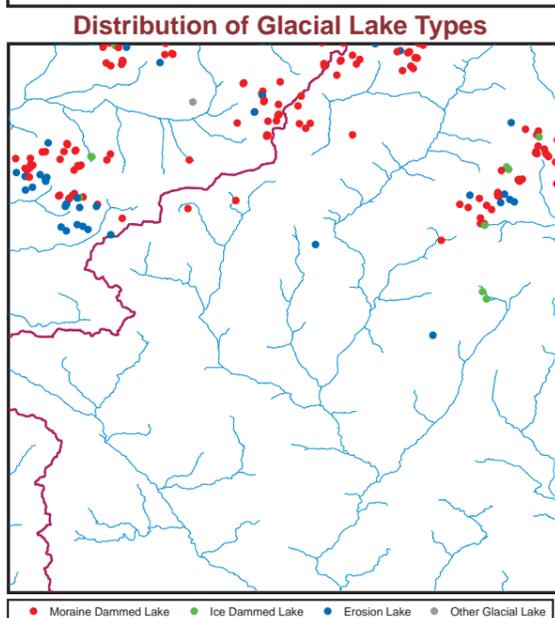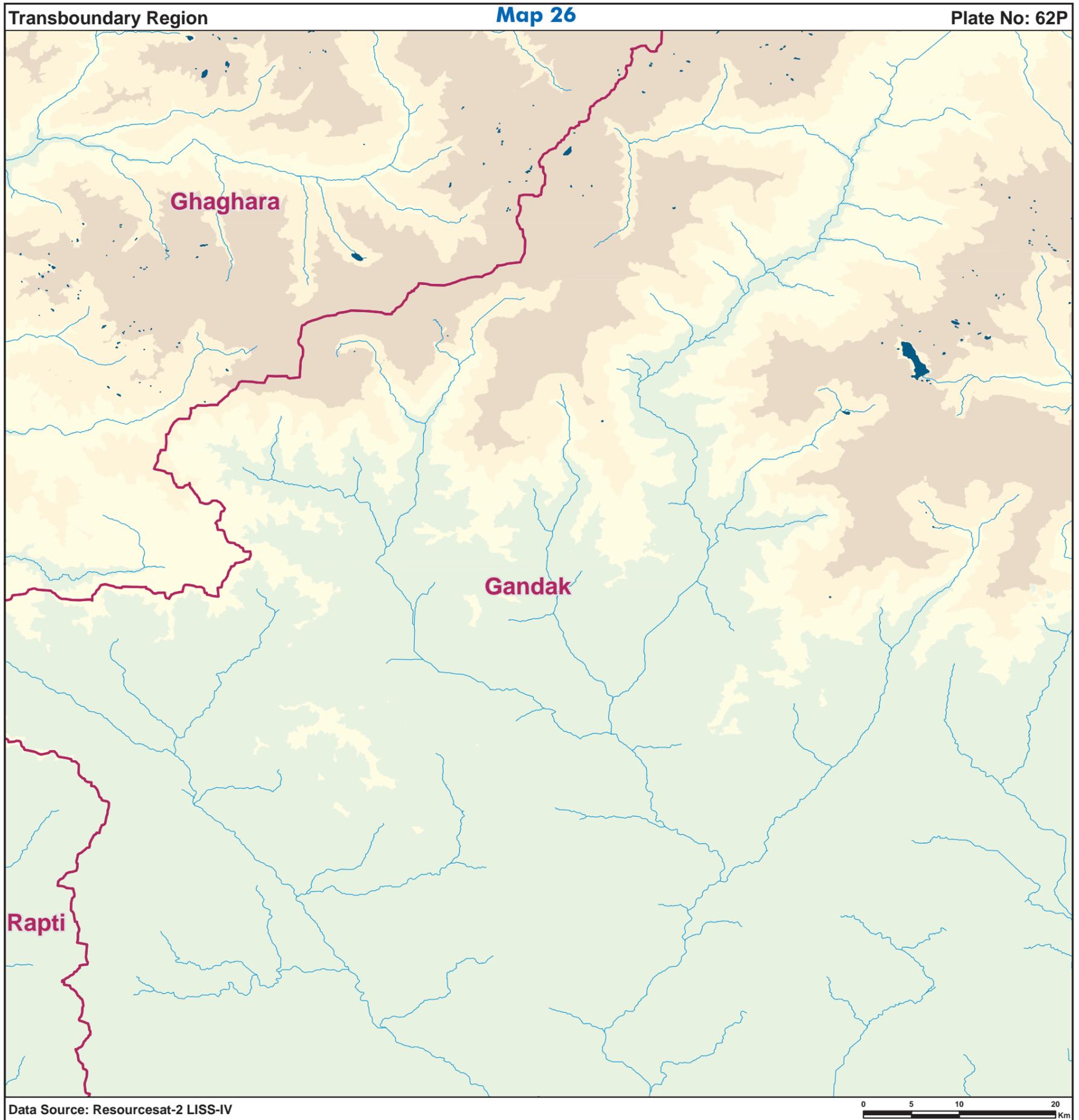
Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	0	0.0
3	4,001 - 5,000	44	471.3
4	> 5,000	127	230.7
	Total	171	702.0

Legend

Glacial Lake | District Boundary | **Elevation Range (m)**
River / Stream | State / UT Boundary | up to 3,000
Basin Boundary | International Boundary | 3,001 - 4,000
Subbasin Boundary | | 4,001 - 5,000
| | > 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

Transboundary Region	Map 27	Plate No: 71D

Gandak

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 6)

0   5   10   20 Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake				
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake	Other Glacial Lake	
1	0.25 - 0.5	0	1	0	18	19	0	0	0	14	0	52
2	0.5 - 1	0	2	0	24	6	0	0	0	6	0	38
3	1 - 5	5	3	0	26	5	1	1	0	9	0	50
4	5 - 10	2	0	0	1	0	0	0	0	1	0	4
5	10 - 50	4	2	0	0	0	0	1	0	2	0	9
6	≥ 50	1	0	0	0	0	0	0	0	0	0	1
	Total	12	8	0	69	30	1	2	0	32	0	154

Legend

⌇ **Subbasin Boundary**   - - - - *District Boundary*

DISCLAIMER:

(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

Transboundary Region **Map 28** **Plate No: 71D**

Gandak

Data Source: Resourcesat-2 LISS-IV

0   5   10   20
Km

Distribution of Glacial Lake Types

● Moraine Dammed Lake   ● Ice Dammed Lake   ● Erosion Lake   ● Other Glacial Lake

Location Map

India

Ganga Basin

53G 53L 53M
53J 53N 62B 62F 62J
62C 62G 62K
62O 77C 74K
62D 71G 71D 71H 71L 71P 77D
62H 62L 62P 78A
63M 72A 72E 72I 72M
63N 72B 72F 72J 72N 78B

Subbasins

Bhagmati   Ramganga
Gandak   Rapti
Ghaghara   Sarda
Kamla   Upper Ganga
Kosi   Yamuna
Lower Ganga

Plate Nos. with GREY annotation does
not have Glacial Lakes.
Corresponding Mapsheets not provided.
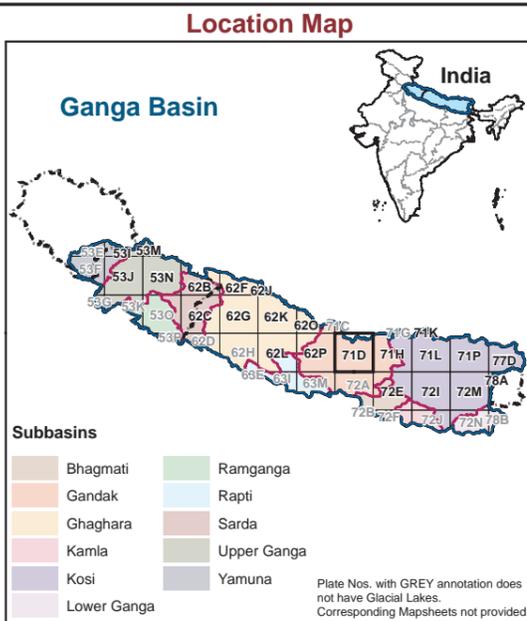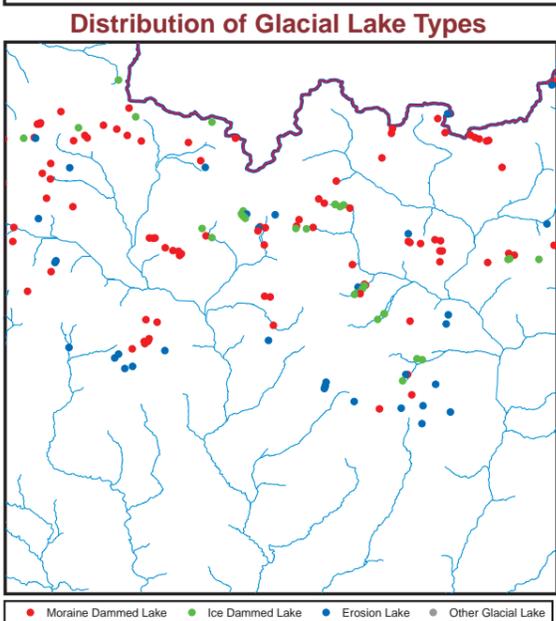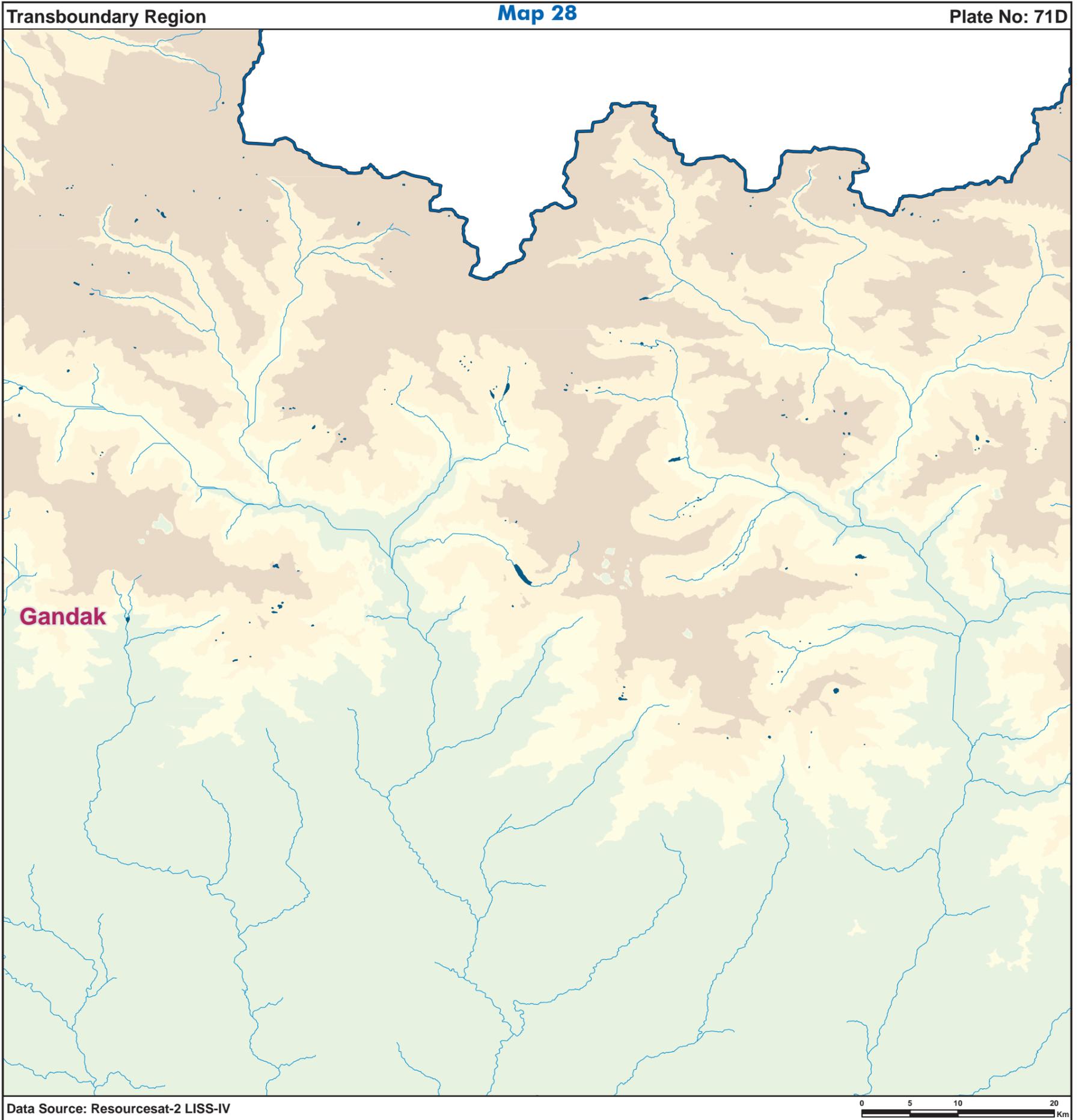
Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	1	9.9
2	3,001 - 4,000	20	57.3
3	4,001 - 5,000	70	250.1
4	> 5,000	63	91.7
	Total	154	409.0

Legend

Glacial Lake	District Boundary	**Elevation Range (m)**	
River / Stream	State / UT Boundary		up to 3,000
Basin Boundary	International Boundary		3,001 - 4,000
Subbasin Boundary			4,001 - 5,000
			> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

| Transboundary Region | Map 29 | Plate No: 71H |

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 6)

0   5   10   20
Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake		
1	0.25 - 0.5	1	6	0	74	53	0	0	0	34	4	172
2	0.5 - 1	2	3	0	60	30	0	0	0	36	9	140
3	1 - 5	4	2	0	74	14	0	1	0	64	10	169
4	5 - 10	5	0	0	21	1	0	1	0	10	2	40
5	10 - 50	10	0	0	15	2	0	1	0	5	4	37
6	≥ 50	10	0	0	1	0	0	0	0	0	0	11
	Total	32	11	0	245	100	0	3	0	149	29	569

Legend

〜〜 **Subbasin Boundary**   ----- *District Boundary*

DISCLAIMER:

(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

Transboundary Region　　　　　　**Map 30**　　　　　　**Plate No: 71H**

Kosi

Gandak

Data Source: Resourcesat-2 LISS-IV

0　5　10　20
Km

Distribution of Glacial Lake Types

● Moraine Dammed Lake　● Ice Dammed Lake　● Erosion Lake　● Other Glacial Lake

Location Map

India

Ganga Basin

53E 53I 53M
53J 53N
62B 62F 62J
62C 62G 62K
62D 62O
62H 62O
53O
62L 62P 71D 71H 71L 71P 77D
62I 72A 72E 72I 72M 78A
63M
72B 72F 72J 72N 78B

Subbasins

Bhagmati	Ramganga
Gandak	Rapti
Ghaghara	Sarda
Kamla	Upper Ganga
Kosi	Yamuna
Lower Ganga	

Plate Nos. with GREY annotation does
not have Glacial Lakes.
Corresponding Mapsheets not provided.
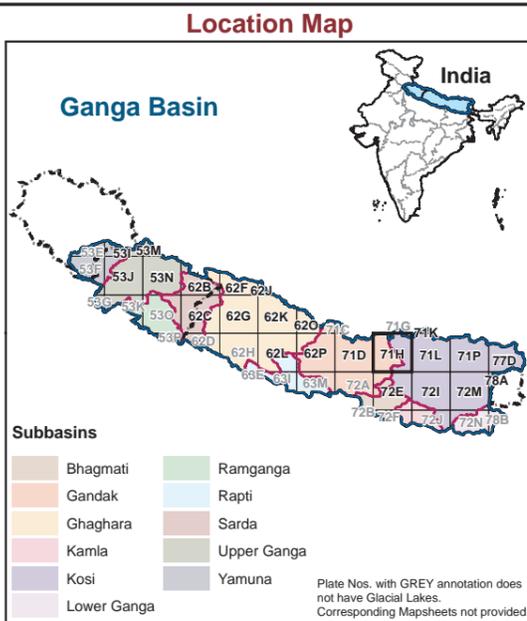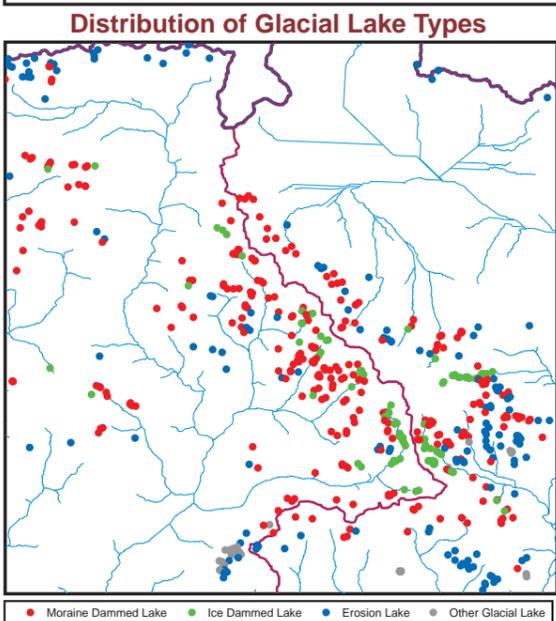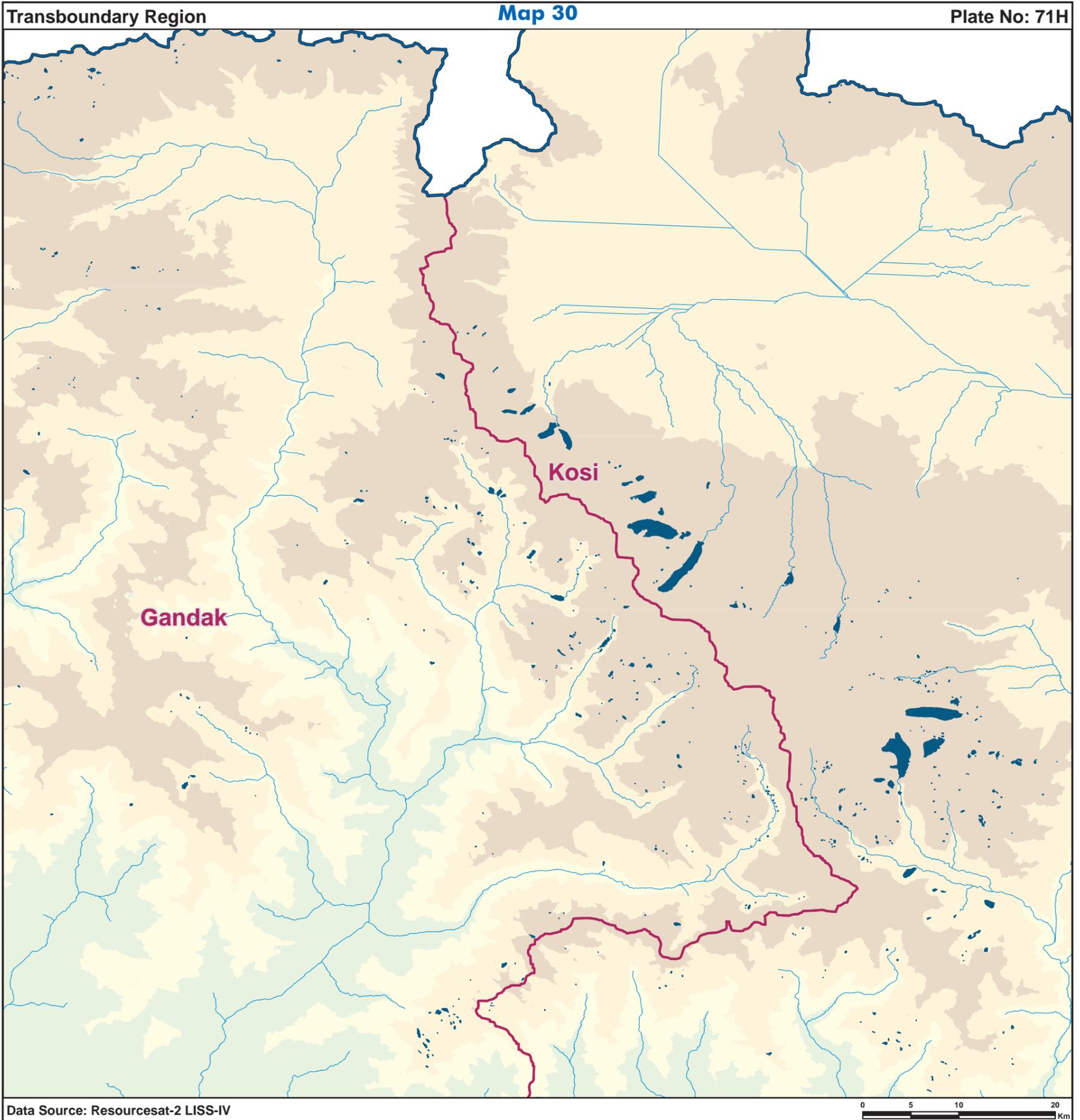
Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	2	10.9
3	4,001 - 5,000	210	730.8
4	> 5,000	357	3,600.1
	Total	569	4,341.9
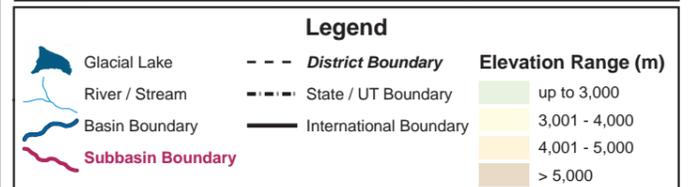
Legend

Glacial Lake	- - - District Boundary	**Elevation Range (m)**
River / Stream	State / UT Boundary	up to 3,000
Basin Boundary	International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

Transboundary Region	Map 31	Plate No: 71K

Kosi

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 1)

0 5 10 20 Km

Distribution of Glacial Lake Types vs. Area-wise

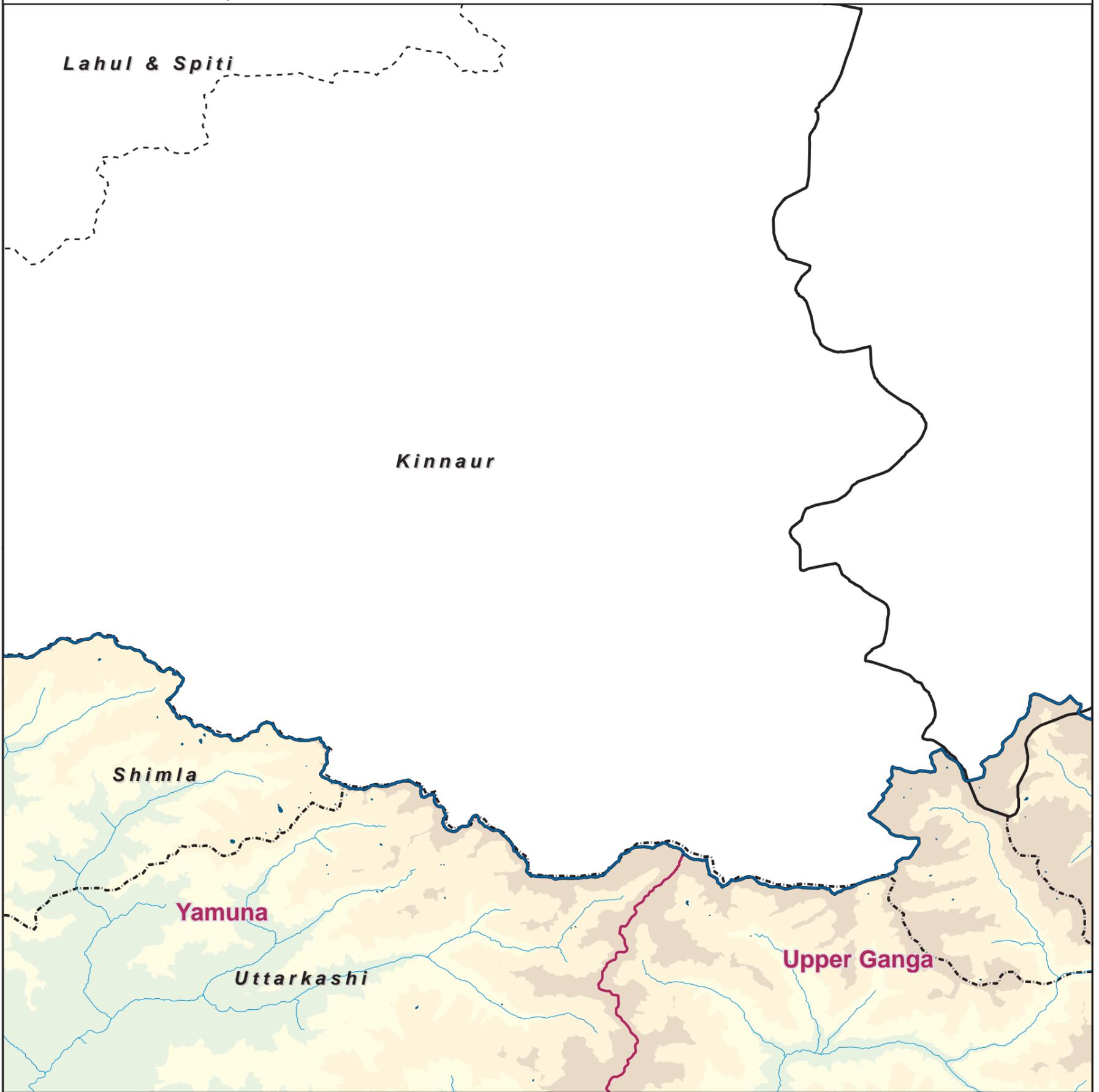| S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake		
1	0.25 - 0.5	0	0	0	0	0	0	0	0	1	0	1
2	0.5 - 1	0	0	0	0	0	0	0	0	1	0	1
3	1 - 5	0	0	0	0	0	0	0	0	4	0	4
4	5 - 10	0	0	0	0	0	0	0	0	0	0	0
5	10 - 50	0	0	0	0	0	0	0	0	0	0	0
6	≥ 50	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	6	0	6

Legend

Subbasin Boundary   District Boundary

DISCLAIMER:
(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose
(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped
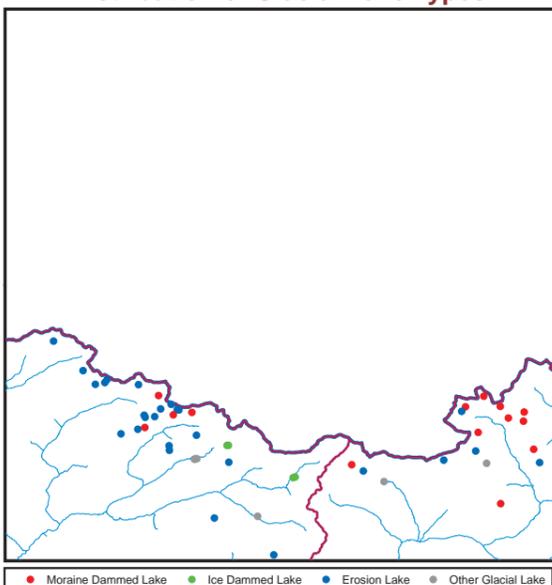
GLACIAL LAKES IN PART OF GANGA BASIN

Transboundary Region	**Map 32**	**Plate No: 71K**

Kosi

Data Source: Resourcesat-2 LISS-IV

0 5 10 20
Km
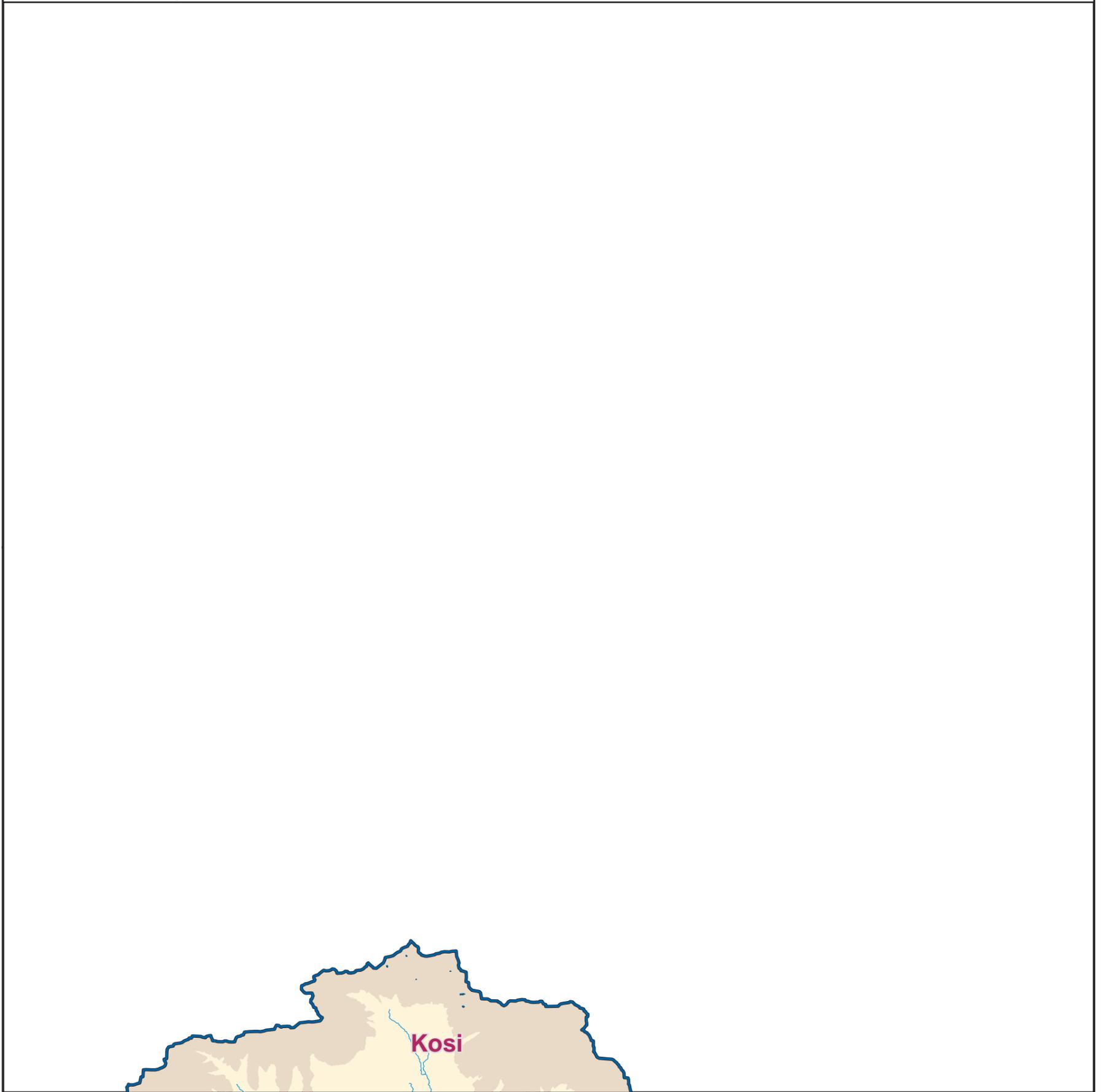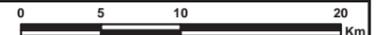
Distribution of Glacial Lake Types

Location Map
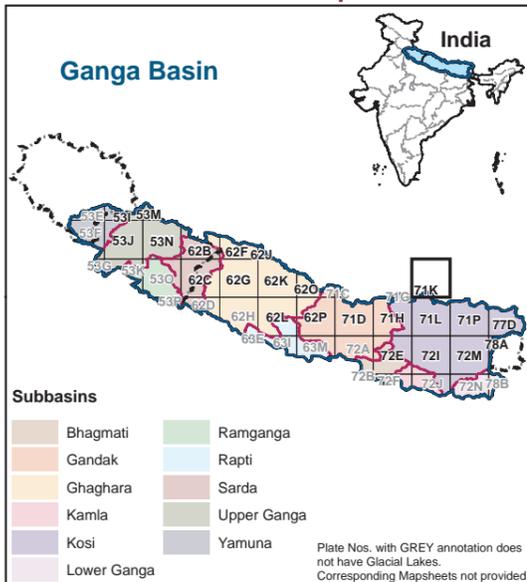
India

Ganga Basin

Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	0	0.0
3	4,001 - 5,000	0	0.0
4	> 5,000	6	9.7
	Total	6	9.7

Legend

Glacial Lake	District Boundary	**Elevation Range (m)**
River / Stream	State / UT Boundary	up to 3,000
Basin Boundary	International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

Subbasins

Bhagmati	Ramganga
Gandak	Rapti
Ghaghara	Sarda
Kamla	Upper Ganga
Kosi	Yamuna
Lower Ganga	

Plate Nos. with GREY annotation does not have Glacial Lakes. Corresponding Mapsheets not provided.

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

• Moraine Dammed Lake • Ice Dammed Lake • Erosion Lake • Other Glacial Lake

SATELLITE IMAGE OF PART OF GANGA BASIN

Transboundary Region	Map 33	Plate No: 71L

Kosi

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 6)

0 5 10 20 Km

Distribution of Glacial Lake Types vs. Area-wise

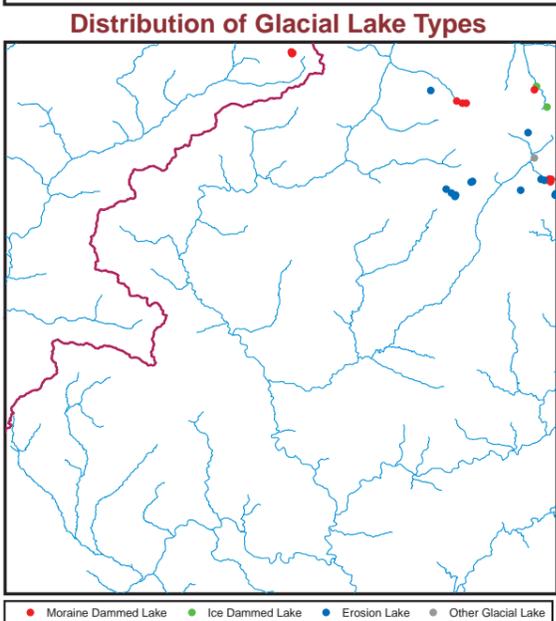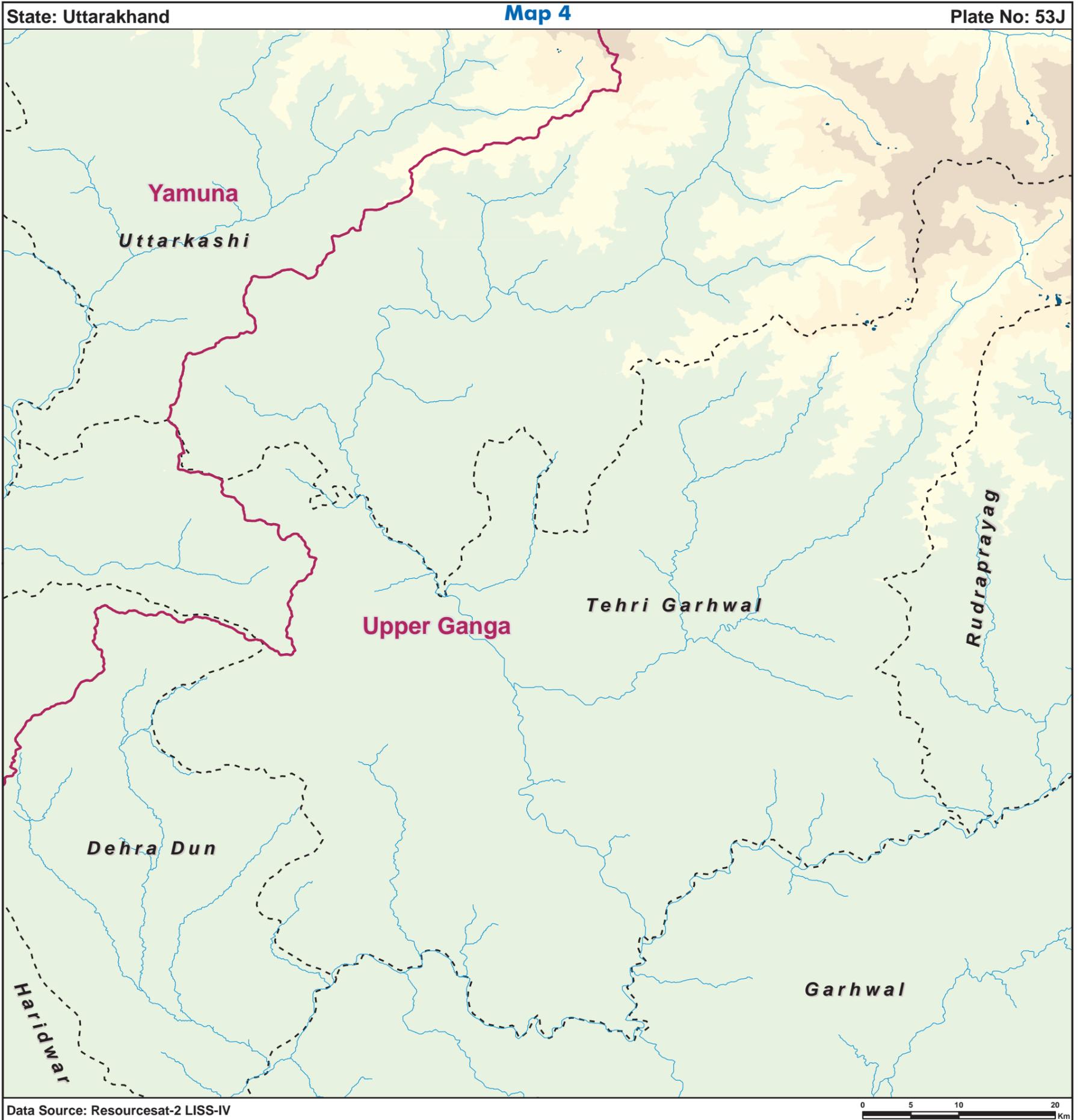| S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake		
1	0.25 - 0.5	0	1	0	106	75	0	0	0	38	1	221
2	0.5 - 1	0	1	0	99	34	0	0	0	31	1	166
3	1 - 5	9	4	0	126	16	0	0	0	24	0	179
4	5 - 10	6	0	0	20	2	0	0	0	2	0	30
5	10 - 50	15	1	0	9	2	0	0	0	2	0	29
6	≥ 50	8	1	0	0	0	0	0	0	1	0	10
	Total	38	8	0	360	129	0	0	0	98	2	635

Legend

⌇ **Subbasin Boundary**   - - - - *District Boundary*

DISCLAIMER:

(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped

GLACIAL LAKES IN PART OF GANGA BASIN

Transboundary Region	Map 34	Plate No: 71L

Kosi

Data Source: Resourcesat-2 LISS-IV

0   5   10   20
Km

Distribution of Glacial Lake Types

- Moraine Dammed Lake
- Ice Dammed Lake
- Erosion Lake
- Other Glacial Lake

Location Map

India

Ganga Basin

53I 53M
53J 53N
62B 62F 62J
62C 62G 62K
62O
62D
62H 62I 62P 71D 71H 71L 71P 77D 77A
63M 72A 72E 72I 72M 78A
72B 72F 72J 72N 78B
72N

Subbasins

- Bhagmati
- Gandak
- Ghaghara
- Kamla
- Kosi
- Lower Ganga
- Ramganga
- Rapti
- Sarda
- Upper Ganga
- Yamuna

Plate Nos. with GREY annotation does not have Glacial Lakes.
Corresponding Mapsheets not provided.
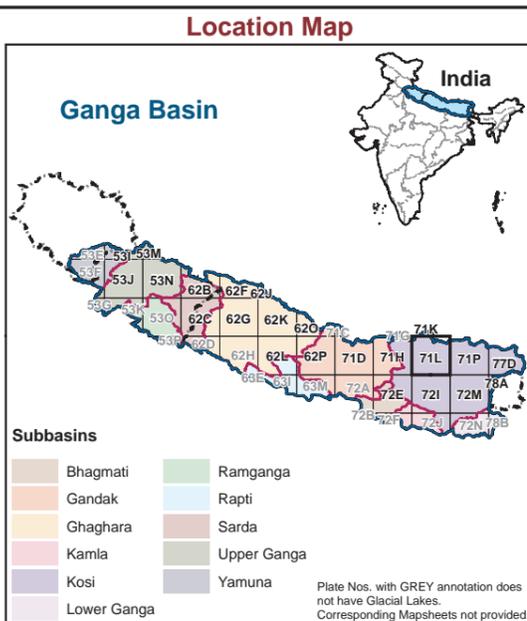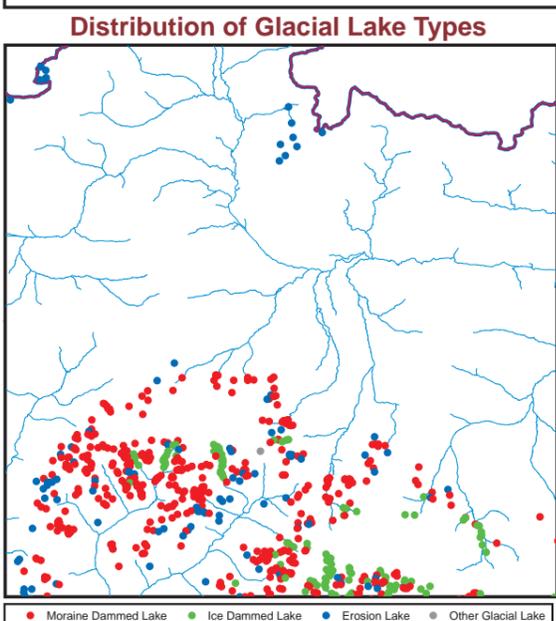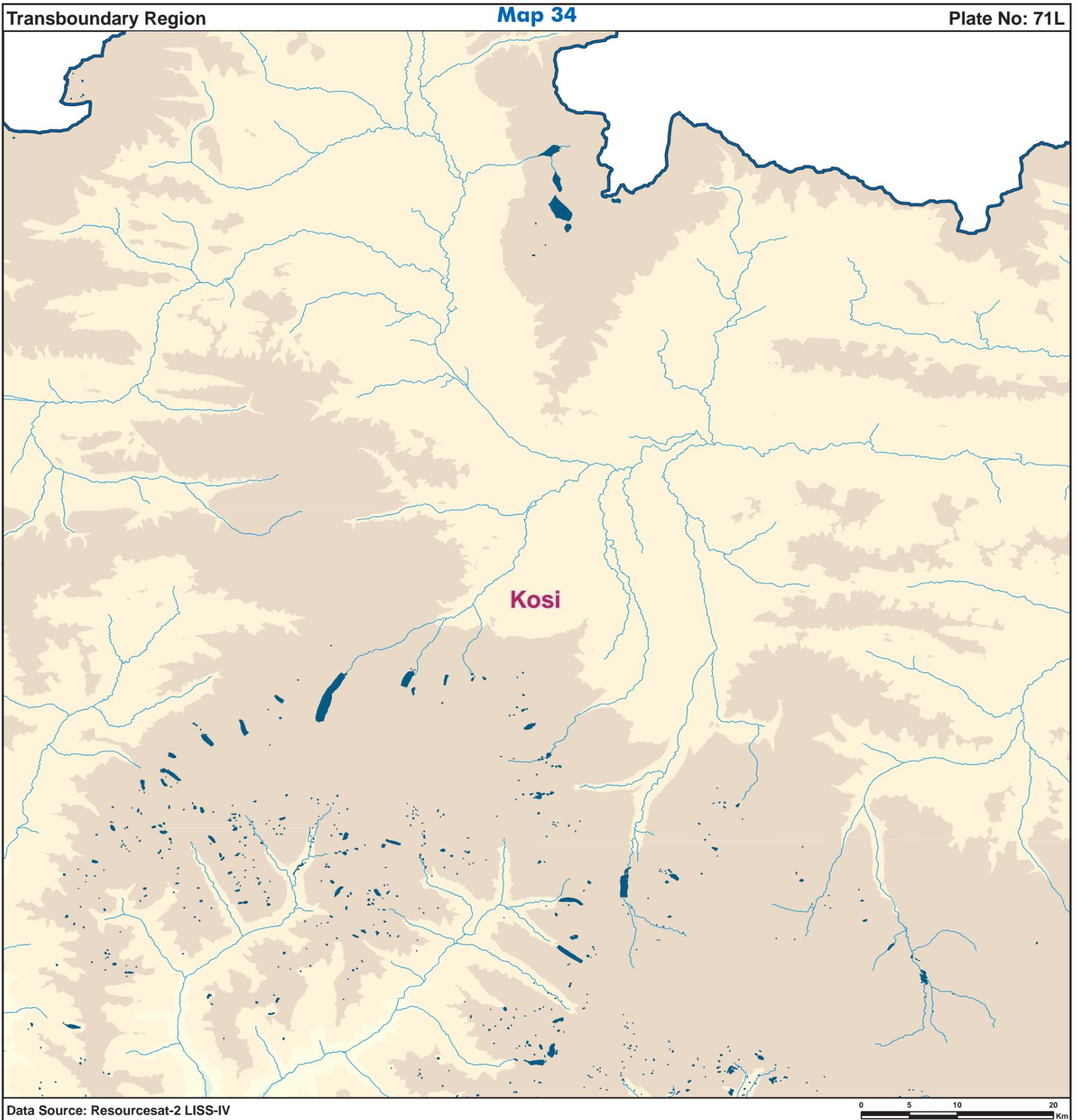
Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	0	0.0
3	4,001 - 5,000	69	221.6
4	> 5,000	566	2,269.2
	Total	635	2,490.8

Legend

Glacial Lake	District Boundary	**Elevation Range (m)**
River / Stream	State / UT Boundary	up to 3,000
Basin Boundary	International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

Transboundary Region	Map 35	Plate No: 71P

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 5)

0   5   10   20 Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake		
1	0.25 - 0.5	0	0	0	8	0	0	0	0	43	6	57
2	0.5 - 1	0	1	0	15	0	0	0	0	81	2	99
3	1 - 5	2	1	0	28	0	0	4	0	130	5	170
4	5 - 10	2	0	0	10	0	0	1	0	24	3	40
5	10 - 50	18	0	0	9	0	0	1	0	19	5	52
6	≥ 50	6	0	0	0	0	0	0	0	4	3	13
	Total	28	2	0	70	0	0	6	0	301	24	431

Legend

⟋⟍ **Subbasin Boundary**   - - - - *District Boundary*

DISCLAIMER:

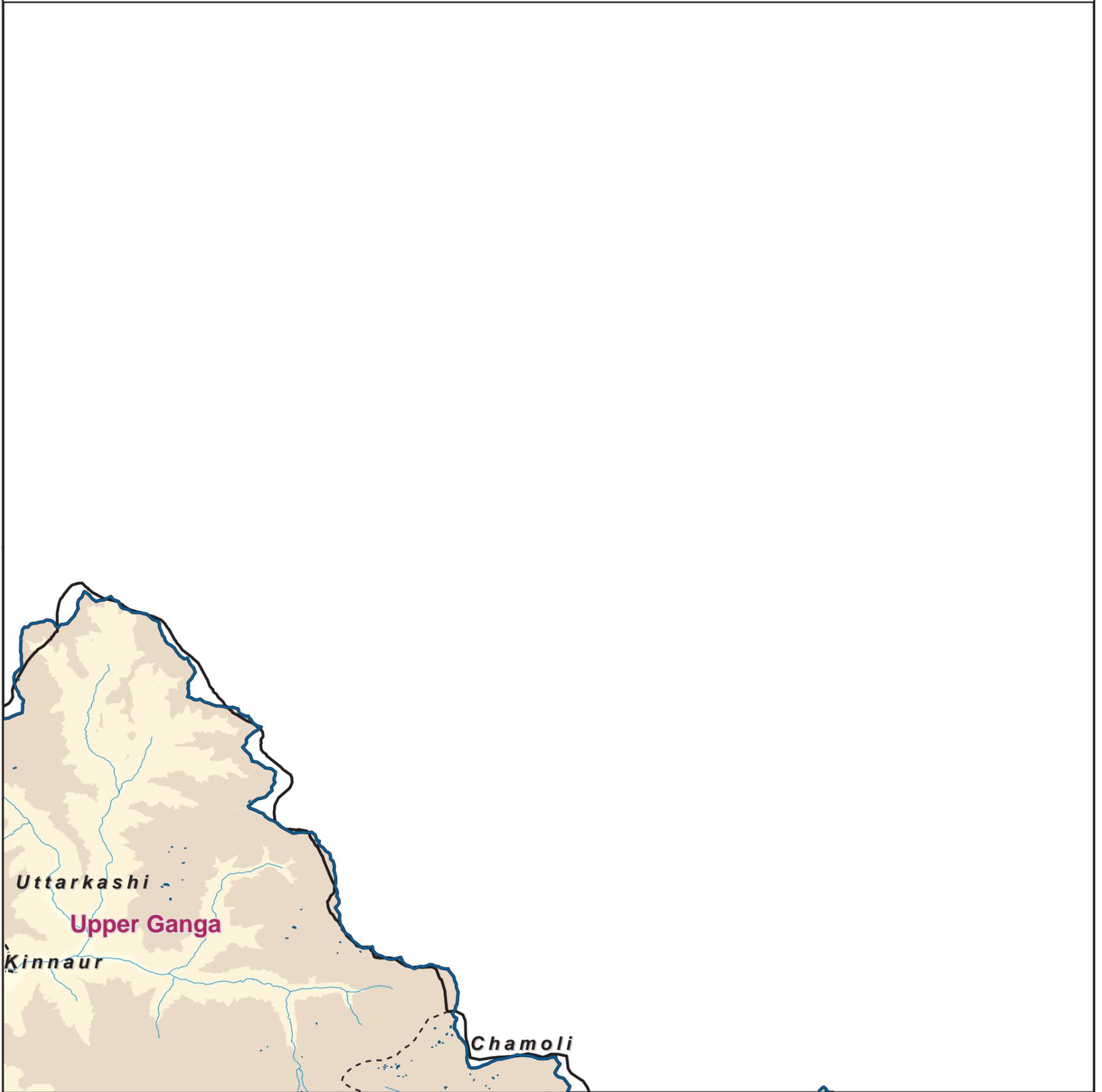(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped
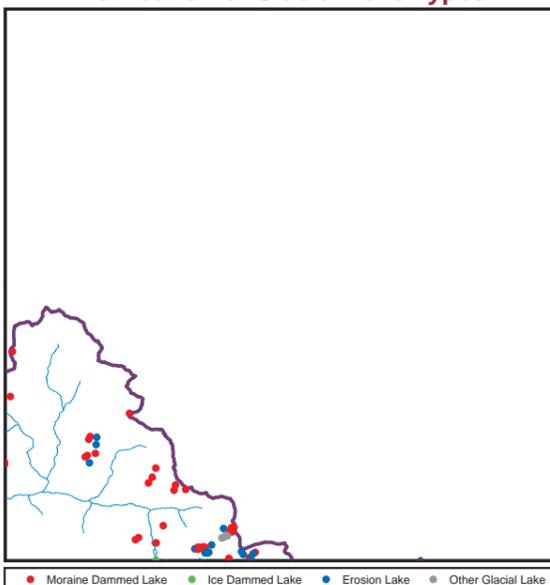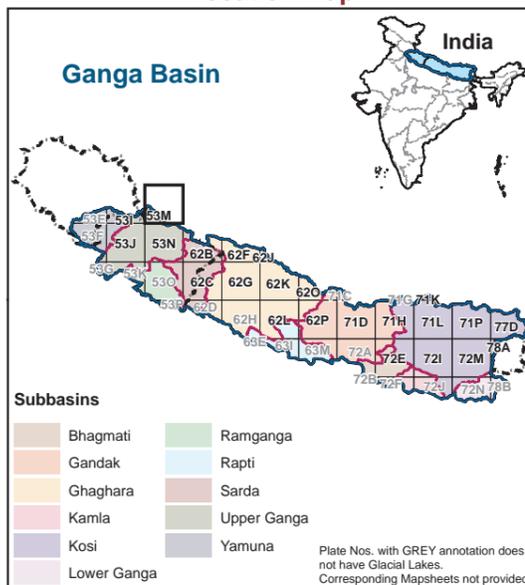
GLACIAL LAKES IN PART OF GANGA BASIN

Transboundary Region	Map 36	Plate No: 71P

Kosi

Data Source: Resourcesat-2 LISS-IV

0   5   10   20
Km

Distribution of Glacial Lake Types

Moraine Dammed Lake   Ice Dammed Lake   Erosion Lake   Other Glacial Lake

Location Map

India

Ganga Basin

53J 53M
53J 53N
62C 62B 62F 62J
62G 62K
62D 62L 62O
62L 62P 71D 71H 71L 71P 77D
63M 71G 74K
63M 72A 72E 72I 72M 78A
72B 72F 72J 72N 78B

Subbasins

Bhagmati	Ramganga
Gandak	Rapti
Ghaghara	Sarda
Kamla	Upper Ganga
Kosi	Yamuna
Lower Ganga	

Plate Nos. with GREY annotation does not have Glacial Lakes.
Corresponding Mapsheets not provided.

Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	1	1.2
3	4,001 - 5,000	87	818.9
4	> 5,000	343	2,471.7
	Total	431	3,291.8

Legend

Glacial Lake	District Boundary	**Elevation Range (m)**
River / Stream	State / UT Boundary	up to 3,000
Basin Boundary	International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

Transboundary Region	Map 37	Plate No: 72E

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 6)

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	Total
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake	Other Glacial Lake	Total
1	0.25 - 0.5	0	0	0	0	0	0	0	0	0	0	0
2	0.5 - 1	0	0	0	0	0	0	0	0	0	0	0
3	1 - 5	0	0	0	0	0	0	0	0	0	0	0
4	5 - 10	0	0	0	0	0	0	0	0	1	0	1
5	10 - 50	0	0	0	0	0	0	0	0	0	0	0
6	≥ 50	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	1	0	1

Legend

〜〜 **Subbasin Boundary** ---- *District Boundary*

DISCLAIMER:
(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose
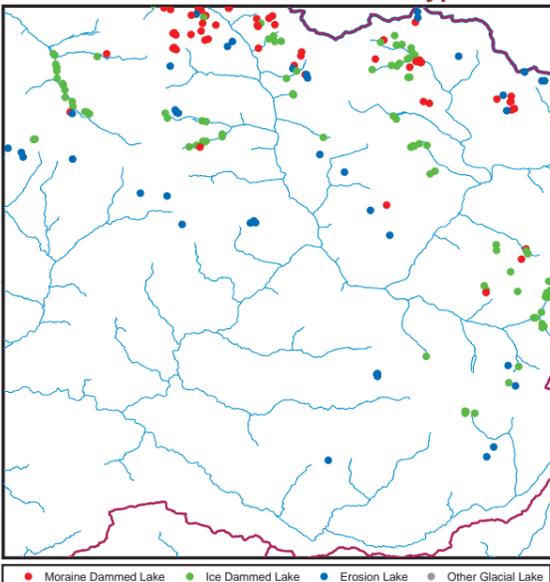(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped
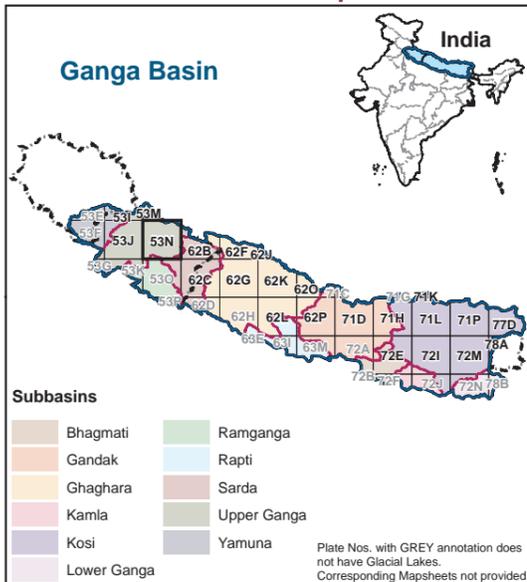
GLACIAL LAKES IN PART OF GANGA BASIN

Transboundary Region

Map 38

Plate No: 72E

Gandak

Kosi

Bhagmati

Kamla

Data Source: Resourcesat-2 LISS-IV

0	5	10	20
Km

Distribution of Glacial Lake Types

● Moraine Dammed Lake	● Ice Dammed Lake	● Erosion Lake	● Other Glacial Lake	

Location Map

India

Ganga Basin

Subbasins

	Bhagmati		Ramganga
	Gandak		Rapti
	Ghaghara		Sarda
	Kamla		Upper Ganga
	Kosi		Yamuna
	Lower Ganga		

Plate Nos. with GREY annotation does
not have Glacial Lakes.
Corresponding Mapsheets not provided.
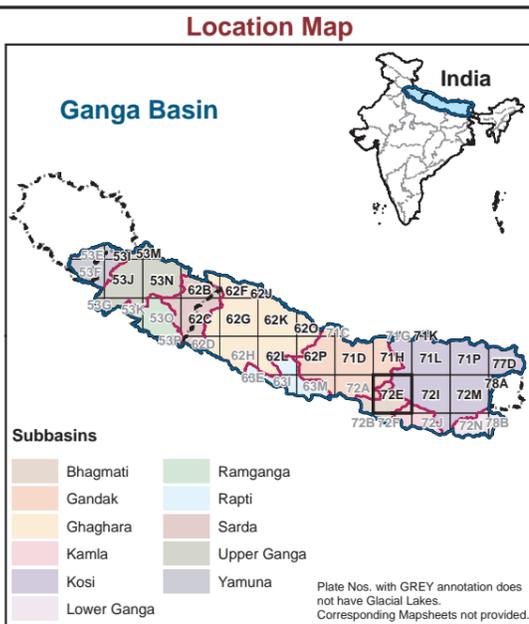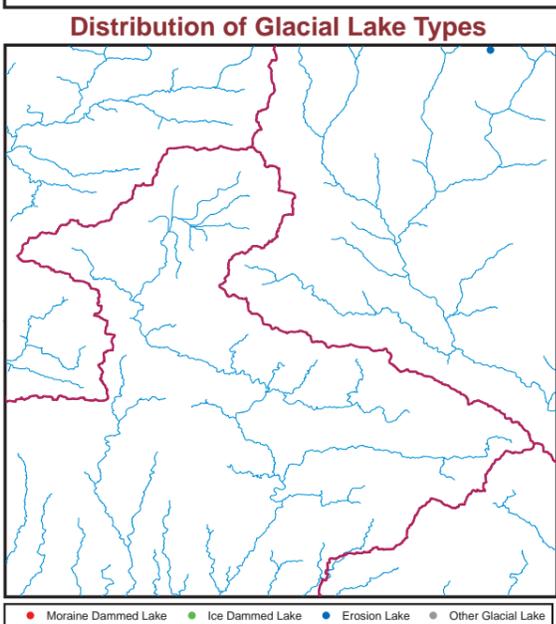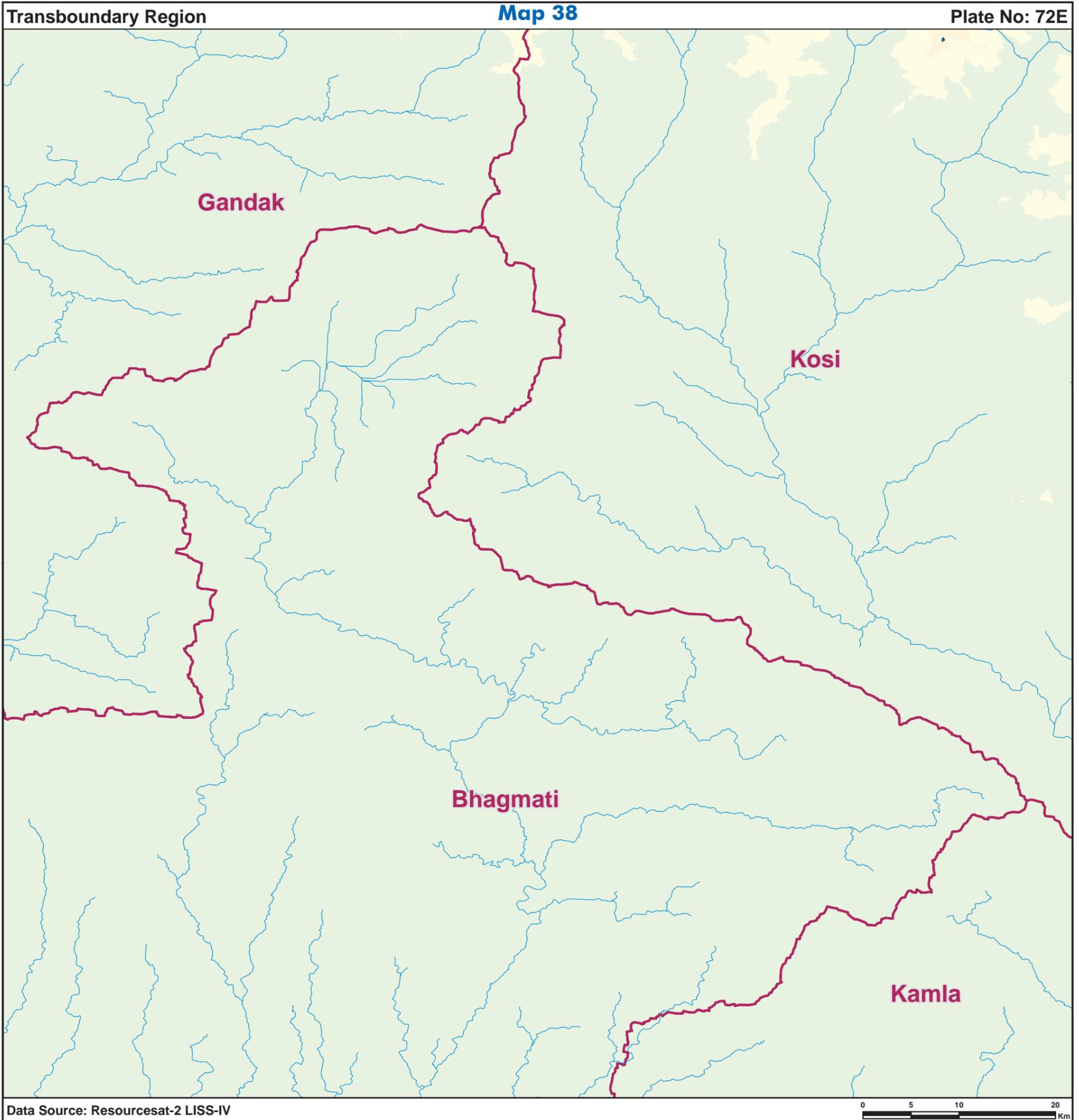
Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	0	0.0
3	4,001 - 5,000	1	6.1
4	> 5,000	0	0.0
	Total	1	6.1

Legend

Glacial Lake	District Boundary	**Elevation Range (m)**
River / Stream	State / UT Boundary	up to 3,000
Basin Boundary	International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
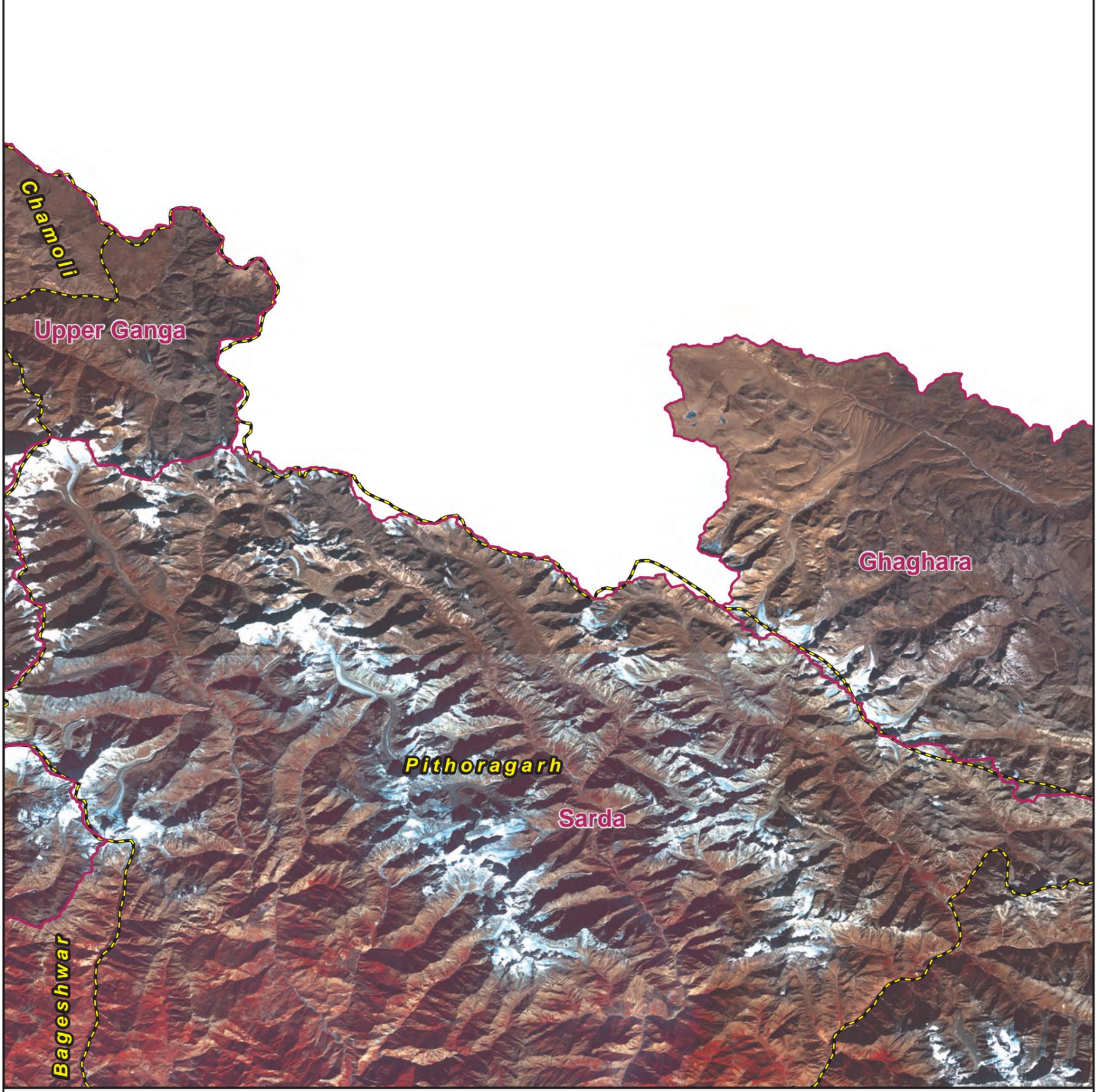Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

Transboundary Region	Map 39	Plate No: 72I

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 6)

0   5   10   20 Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake		
1	0.25 - 0.5	1	3	0	44	63	0	0	0	31	1	143
2	0.5 - 1	2	2	0	36	31	0	0	0	30	0	101
3	1 - 5	3	5	0	76	19	0	0	0	45	0	148
4	5 - 10	4	1	0	15	2	0	1	0	8	1	32
5	10 - 50	6	2	0	14	2	0	1	0	2	0	27
6	≥ 50	5	2	0	1	0	0	0	0	0	0	8
	Total	21	15	0	186	117	0	2	0	116	2	459

Legend

⟿ **Subbasin Boundary**   ‑ ‑ ‑ ‑ *District Boundary*

DISCLAIMER:

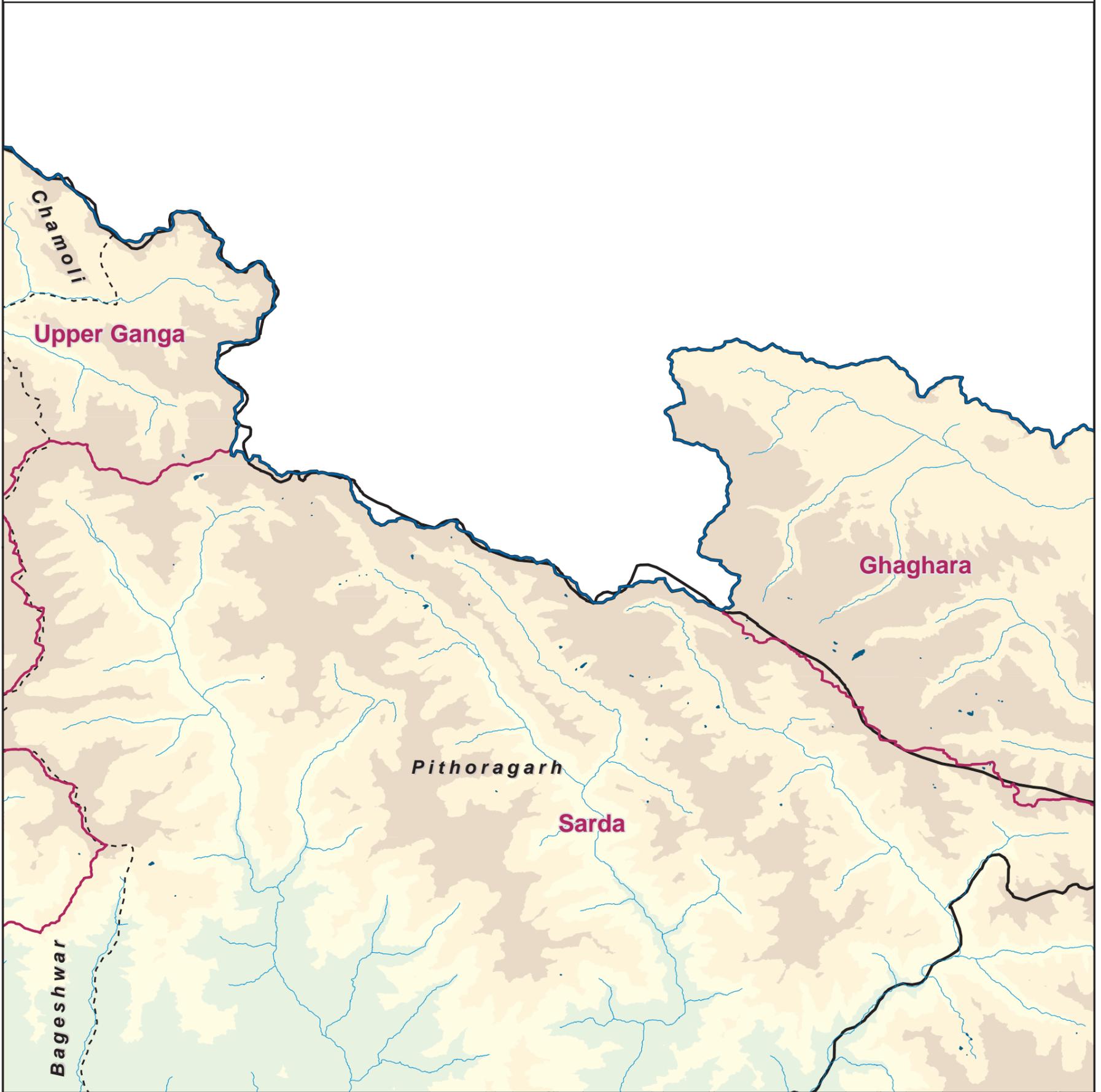(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped
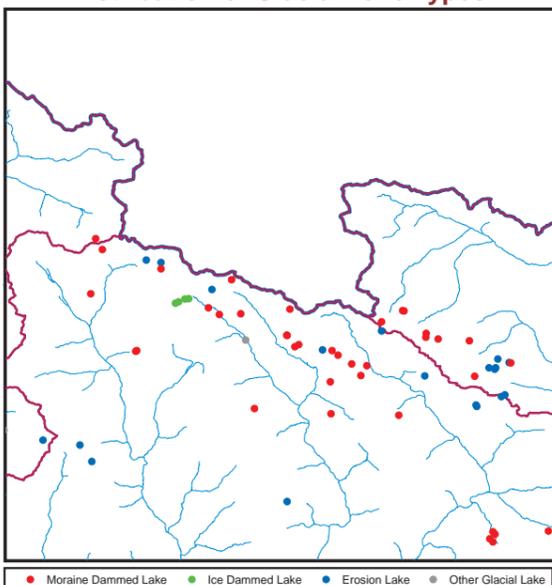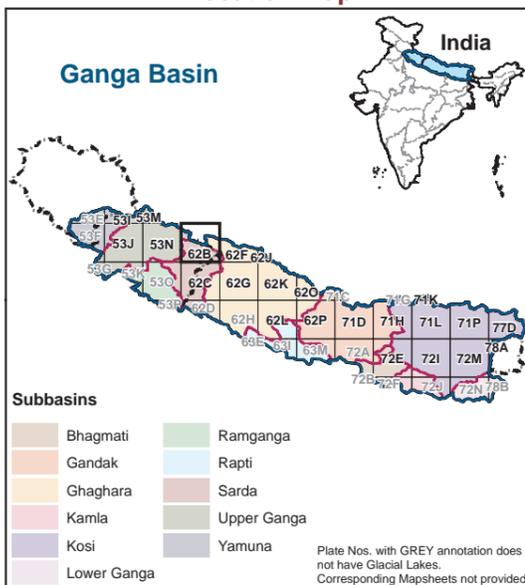
GLACIAL LAKES IN PART OF GANGA BASIN

Transboundary Region   **Map 40**   **Plate No: 72I**

Kosi

Kamla

Data Source: Resourcesat-2 LISS-IV

0   5   10   20
Km

Distribution of Glacial Lake Types

- Moraine Dammed Lake
- Ice Dammed Lake
- Erosion Lake
- Other Glacial Lake

Location Map

India

Ganga Basin

Subbasins

- Bhagmati
- Gandak
- Ghaghara
- Kamla
- Kosi
- Lower Ganga
- Ramganga
- Rapti
- Sarda
- Upper Ganga
- Yamuna

Plate Nos. with GREY annotation does not have Glacial Lakes.
Corresponding Mapsheets not provided.
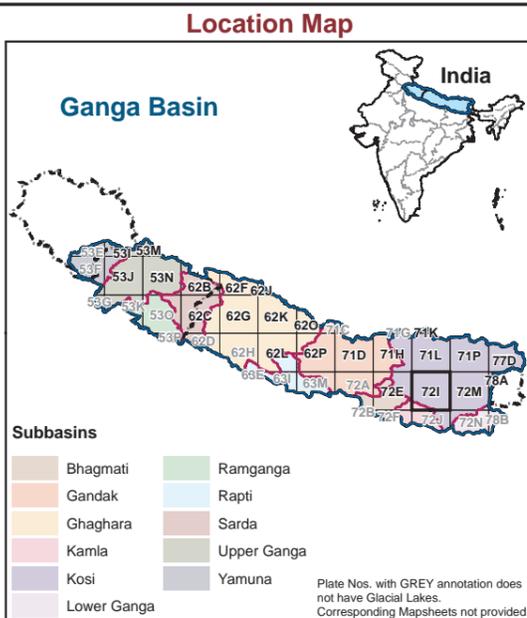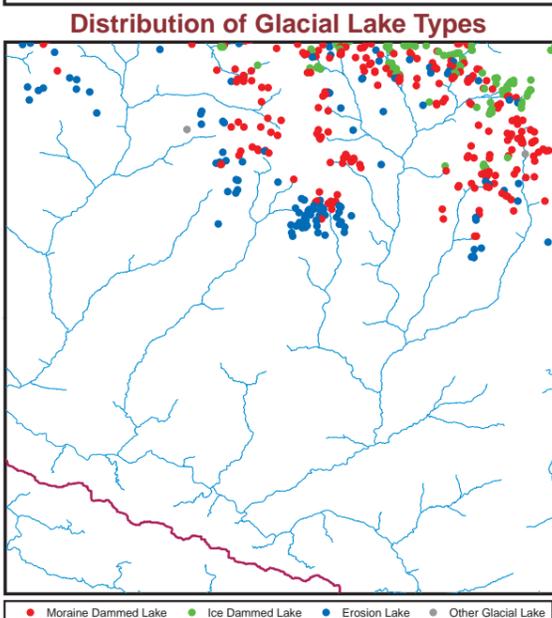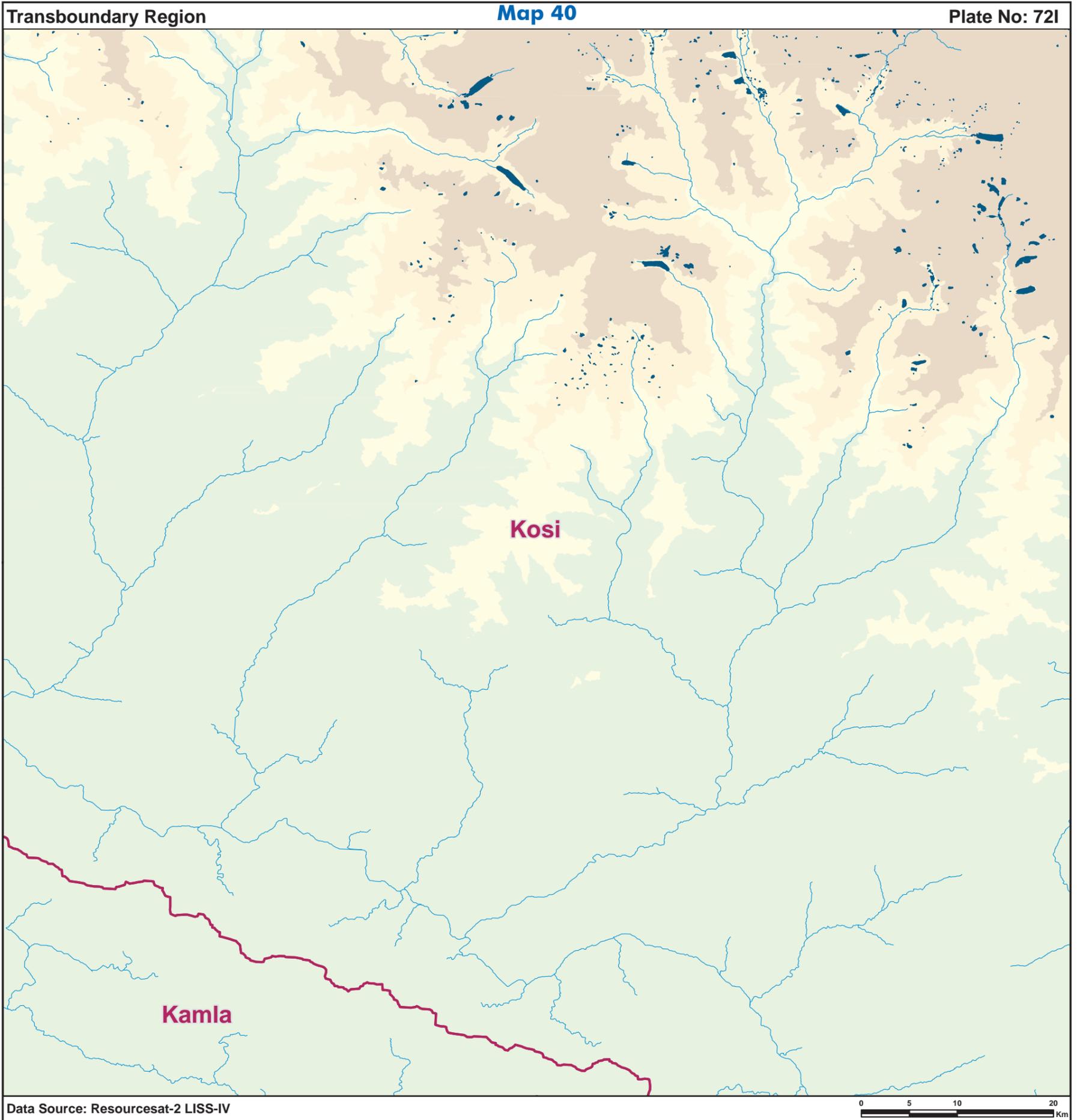
Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	0	0.0
3	4,001 - 5,000	245	1,074.5
4	> 5,000	214	1,091.7
	Total	459	2,166.2

Legend

Glacial Lake	District Boundary	**Elevation Range (m)**
River / Stream	State / UT Boundary	up to 3,000
Basin Boundary	International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

Transboundary Region	Map 41	Plate No: 72M

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 6)

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake				
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake	Other Glacial Lake	
1	0.25 - 0.5	0	1	0	9	11	0	2	0	62	0	85
2	0.5 - 1	0	1	0	21	7	0	0	0	83	0	112
3	1 - 5	2	3	0	51	3	0	22	0	150	0	231
4	5 - 10	3	0	0	7	0	0	14	0	26	0	50
5	10 - 50	6	1	0	2	0	0	16	0	7	2	34
6	≥ 50	6	0	0	0	0	0	0	0	0	0	6
	Total	17	6	0	90	21	0	54	0	328	2	518

Legend

—— **Subbasin Boundary**   - - - - *District Boundary*
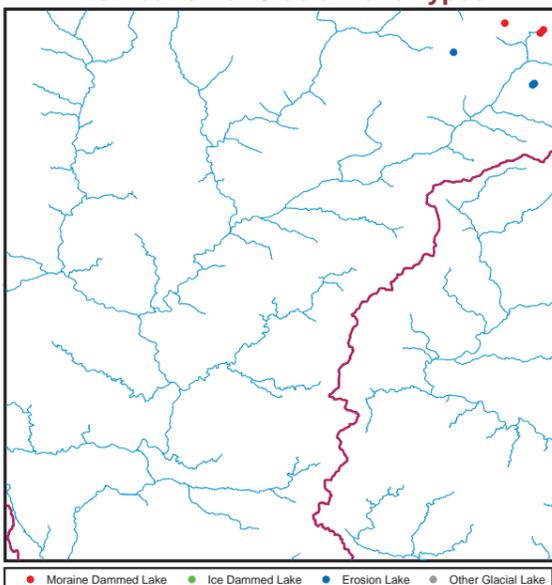
DISCLAIMER:
(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose
(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped
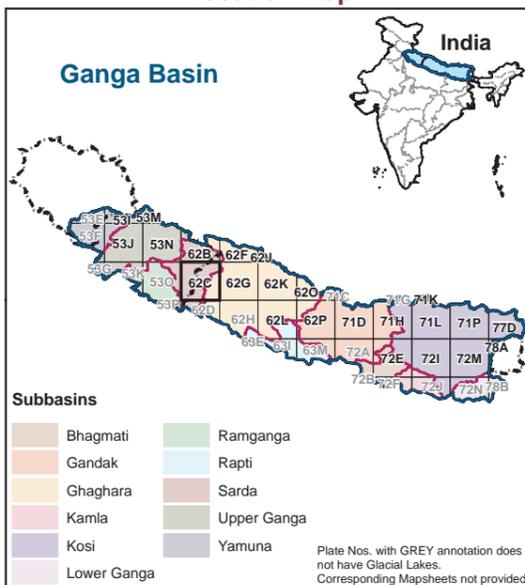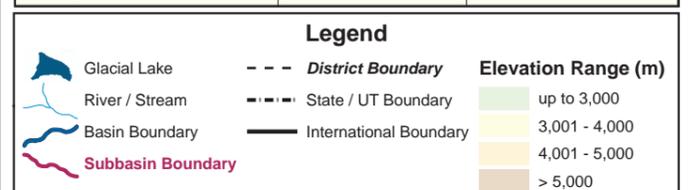
GLACIAL LAKES IN PART OF GANGA BASIN

Transboundary Region **Map 42** **Plate No: 72M**

Kosi

Lower Ganga

Data Source: Resourcesat-2 LISS-IV

0   5   10   20
Km

Distribution of Glacial Lake Types

● Moraine Dammed Lake   ● Ice Dammed Lake   ● Erosion Lake   ● Other Glacial Lake

Location Map

India

Ganga Basin

53E 53I 53M
53J 53N
62B 62F 62J
62C 62G 62K
62O
62L 62P 71D 71H 71L 71P 77D
62K 62O 71G 74K
63M 72A 72E 72I 72M 78A
72B 72F 72J 72N 78B

Subbasins

Bhagmati		Ramganga
Gandak		Rapti
Ghaghara		Sarda
Kamla		Upper Ganga
Kosi		Yamuna
Lower Ganga		

Plate Nos. with GREY annotation does
not have Glacial Lakes.
Corresponding Mapsheets not provided.
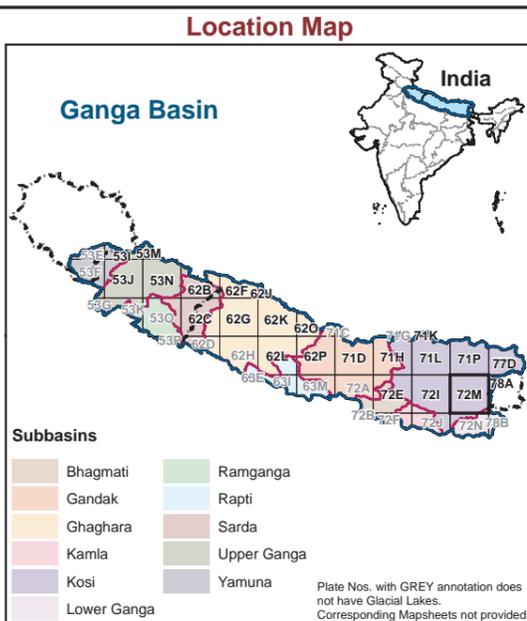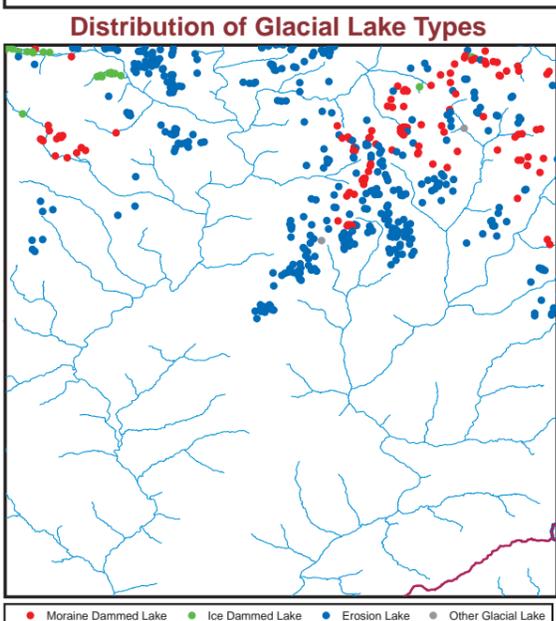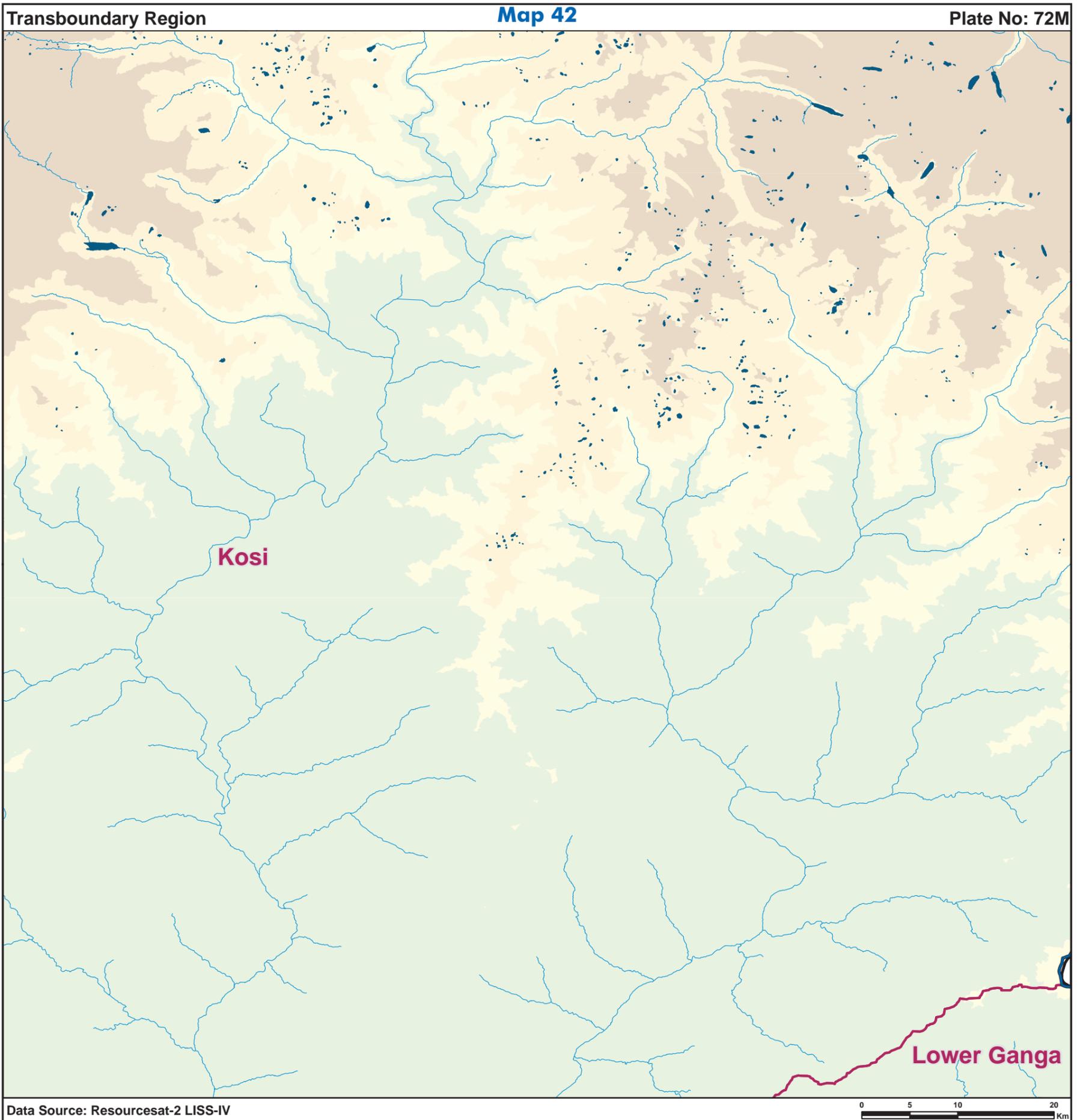
Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	20	89.5
3	4,001 - 5,000	354	1,500.1
4	> 5,000	144	634.1
	Total	518	2,223.8
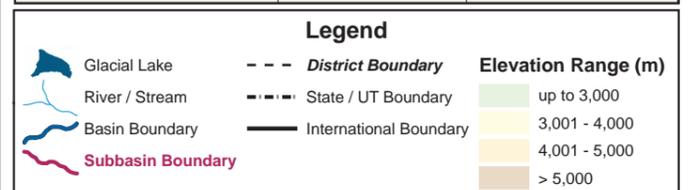
Legend

Glacial Lake	District Boundary	**Elevation Range (m)**
River / Stream	State / UT Boundary	up to 3,000
Basin Boundary	International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
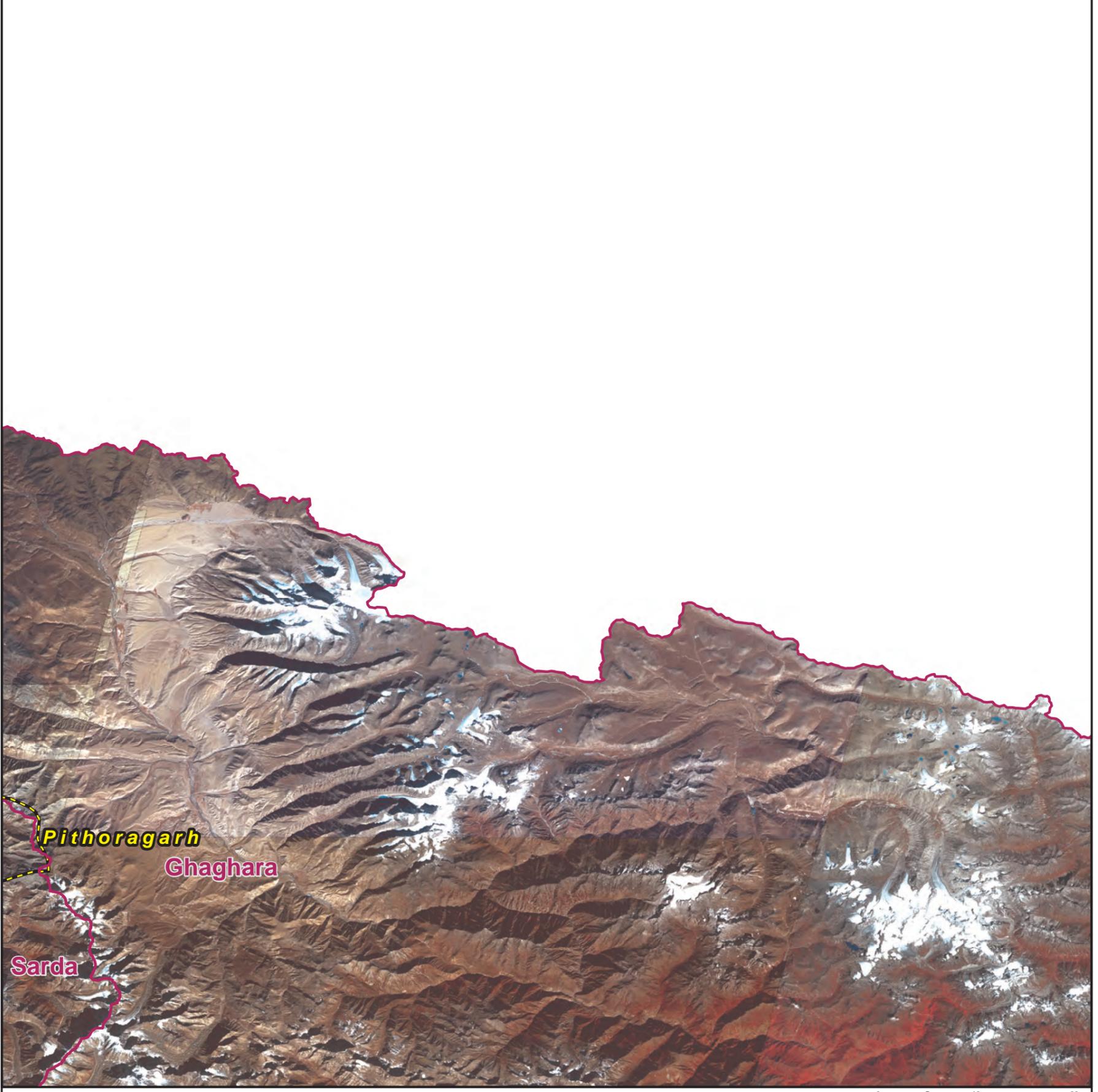Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

State: Sikkim	Map 43	Plate No: 77D

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 3)

0   5   10   20 Km

Distribution of Glacial Lake Types vs. Area-wise

S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake			Other Glacial Lake	
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake		
1	0.25 - 0.5	0	0	0	3	1	0	0	0	3	1	8
2	0.5 - 1	1	0	0	3	0	0	0	0	4	3	11
3	1 - 5	0	0	0	3	1	0	1	0	15	0	20
4	5 - 10	3	0	0	0	0	0	0	0	1	0	4
5	10 - 50	2	0	0	0	0	0	0	0	1	0	3
6	≥ 50	3	0	0	0	0	0	0	0	0	1	4
	Total	9	0	0	9	2	0	1	0	24	5	50

Legend

⌇ Subbasin Boundary   - - - - District Boundary

DISCLAIMER:
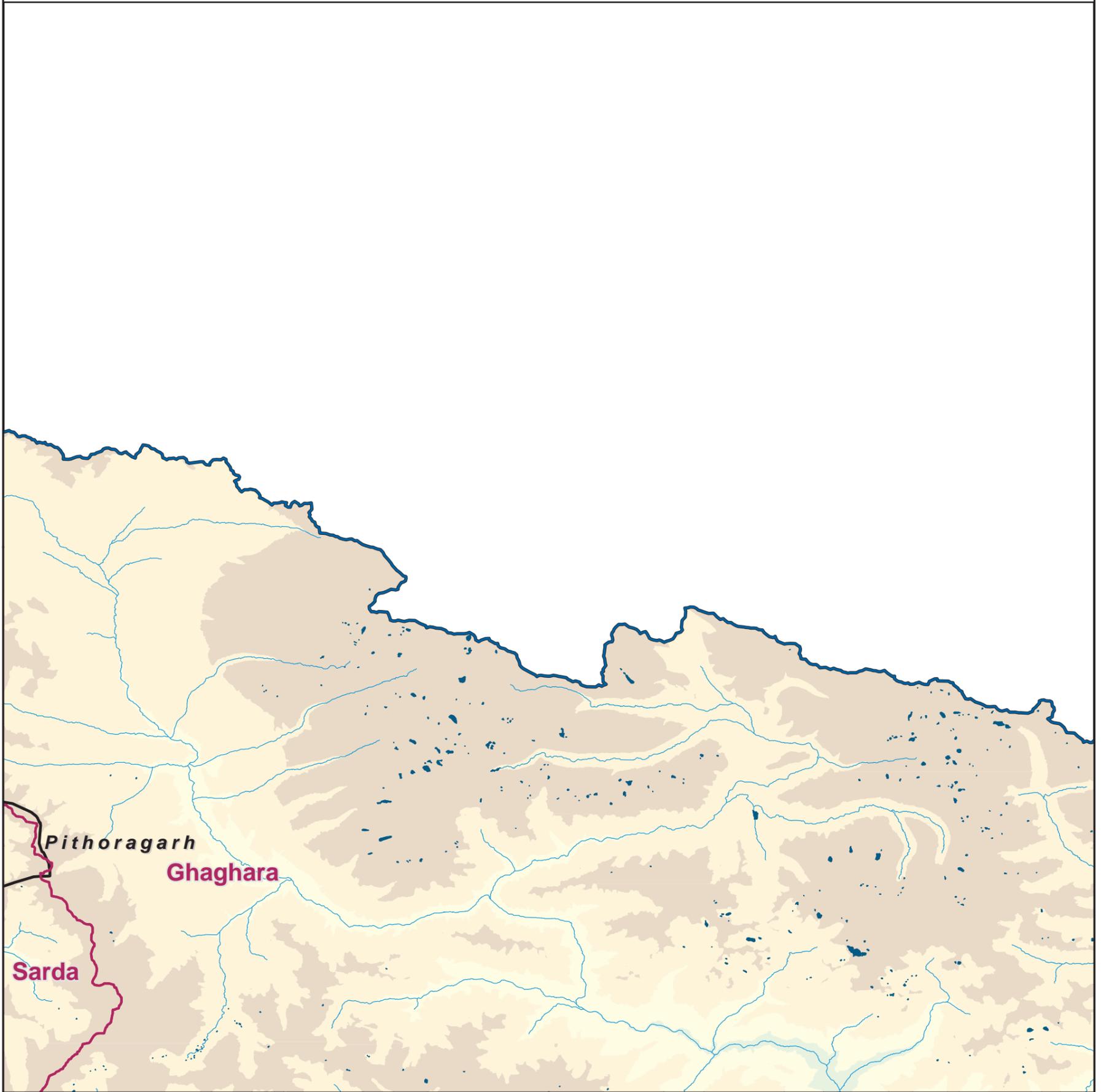(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose
(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped
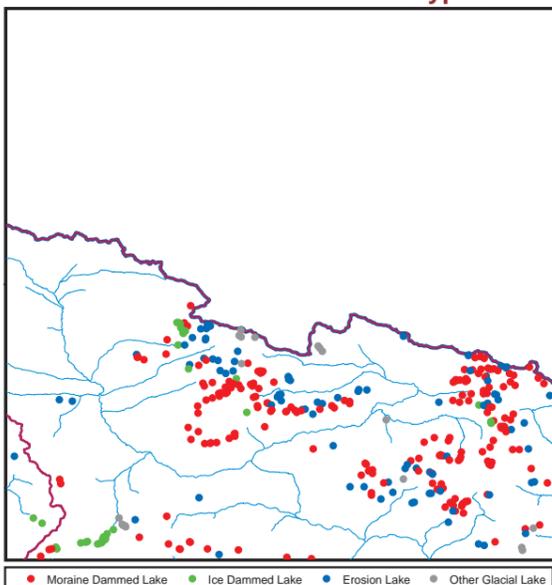
GLACIAL LAKES IN PART OF GANGA BASIN

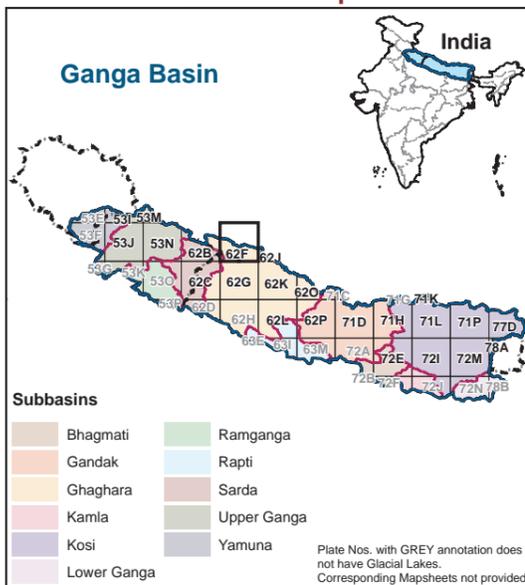**State: Sikkim**   **Map 44**   **Plate No: 77D**

Data Source: Resourcesat-2 LISS-IV
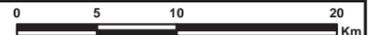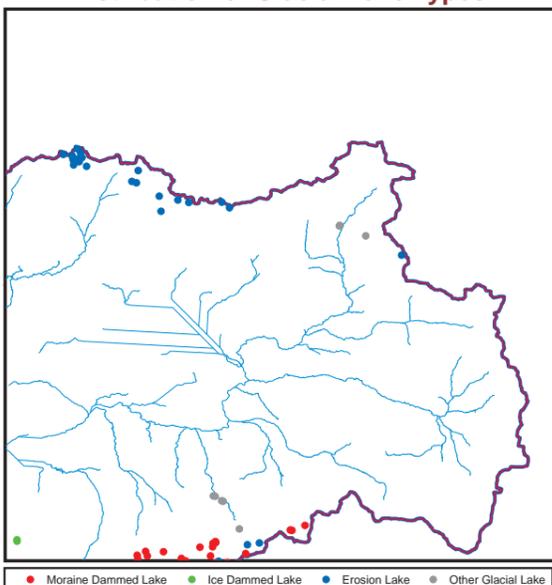
Kosi

North Sikkim

0   5   10   20
Km

Distribution of Glacial Lake Types

- Moraine Dammed Lake
- Ice Dammed Lake
- Erosion Lake
- Other Glacial Lake

Location Map

India

Ganga Basin

Subbasins
- Bhagmati
- Gandak
- Ghaghara
- Kamla
- Kosi
- Lower Ganga
- Ramganga
- Rapti
- Sarda
- Upper Ganga
- Yamuna

Plate Nos. with GREY annotation does
not have Glacial Lakes.
Corresponding Mapsheets not provided.
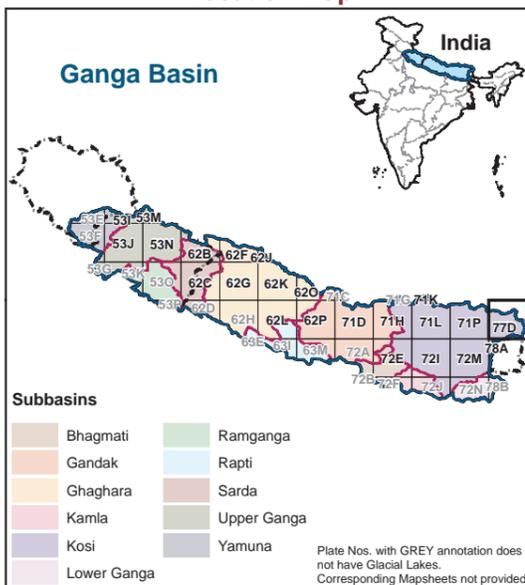
Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	0	0.0
3	4,001 - 5,000	5	104.3
4	> 5,000	45	333.1
	Total	50	437.3

Legend

Glacial Lake	*District Boundary*	**Elevation Range (m)**
River / Stream	State / UT Boundary	up to 3,000
Basin Boundary	International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
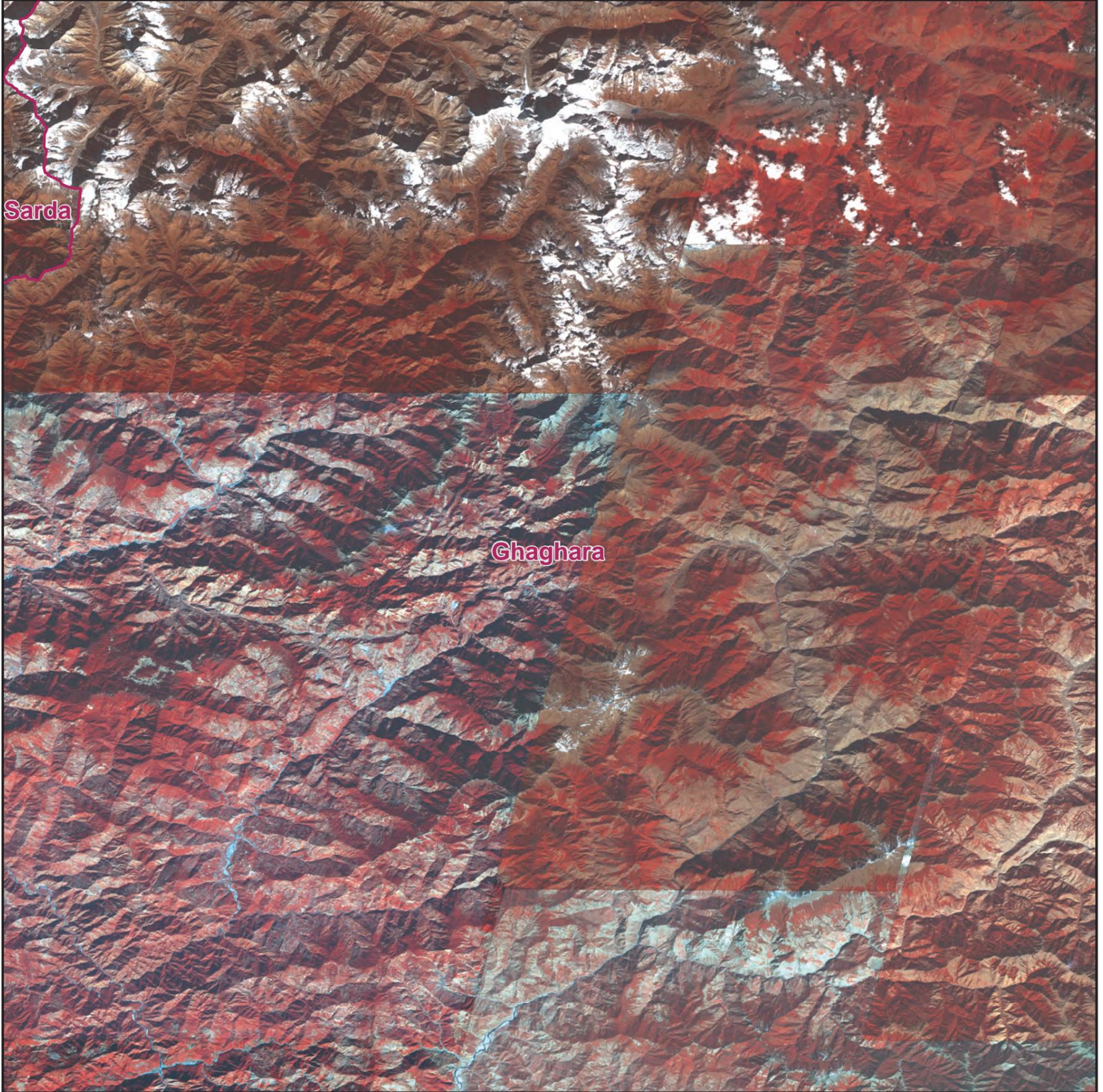Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

SATELLITE IMAGE OF PART OF GANGA BASIN

State: Sikkim, West Bengal	Map 45	Plate No: 78A

Kosi

North Sikkim

West Sikkim

South Sikkim

East Sikkim

Darjiling

Kalimpong

Lower Ganga

Data Source: Resourcesat-2 LISS-IV (Total Nos of Scenes: 3)

0 5 10 20 Km

Distribution of Glacial Lake Types vs. Area-wise

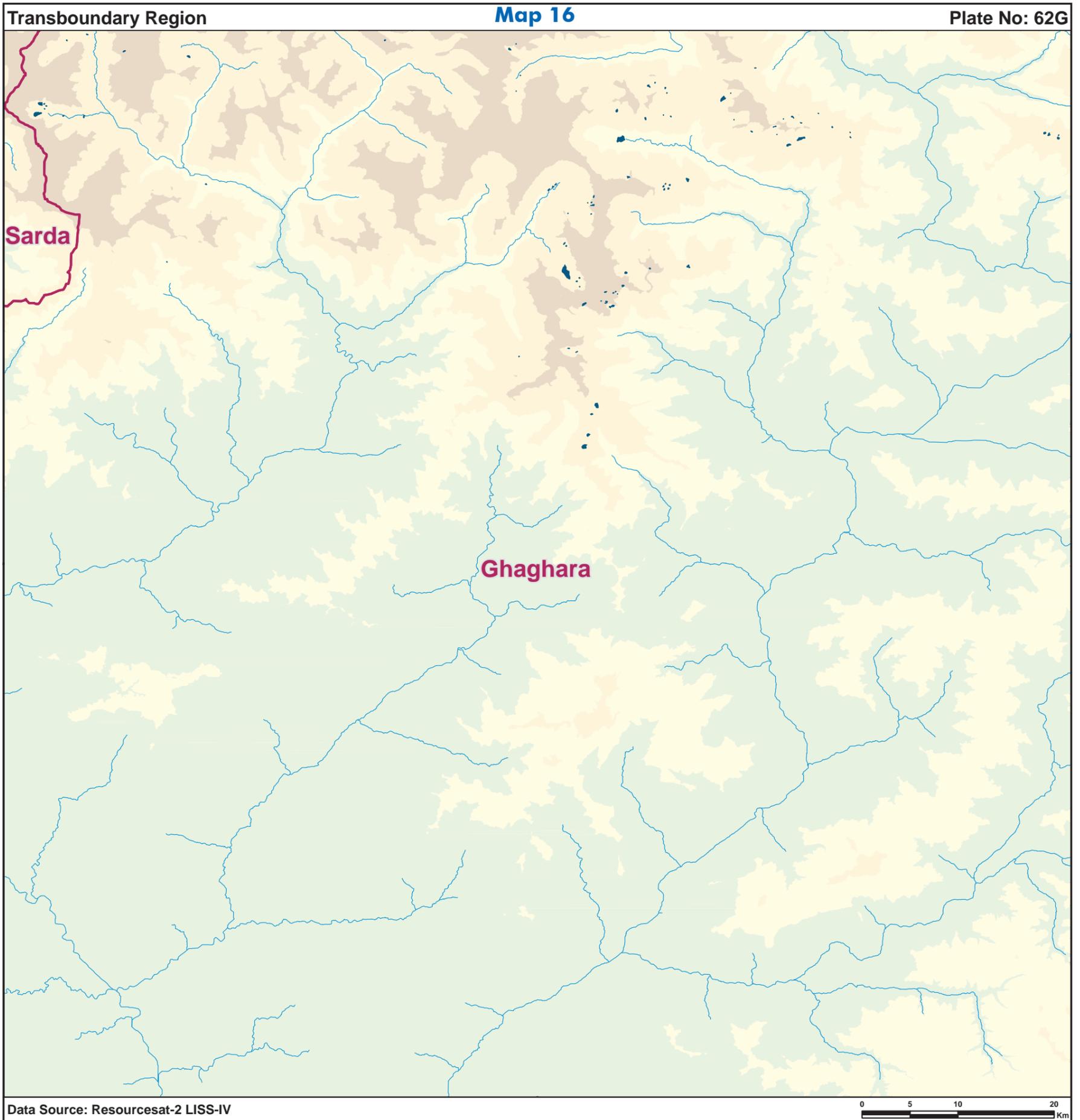| S.No.	Glacial Lake Area Range (ha)	Types of Glacial Lakes										Total
		Moraine Dammed Lake				Ice Dammed Lake		Erosion Lake				
		End-moraine Dammed Lake	Lateral Moraine Dammed Lake	Lateral Moraine Dammed Lake with Ice	Other Moraine Dammed Lake	Supra-glacial Lake	Glacier Ice-dammed Lake	Cirque Erosion Lake	Glacier Trough Valley Erosion Lake	Other Glacial Erosion Lake	Other Glacial Lake	
1	0.25 - 0.5	0	1	0	8	6	0	0	0	2	0	17
2	0.5 - 1	0	2	0	6	5	0	0	0	5	0	18
3	1 - 5	1	0	0	6	8	0	0	0	11	0	26
4	5 - 10	0	0	0	3	0	0	1	0	0	0	4
5	10 - 50	4	0	0	2	0	0	0	0	0	0	6
6	≥ 50	2	0	0	0	0	0	0	0	0	0	2
	Total	7	3	0	25	19	0	1	0	18	0	73

Legend

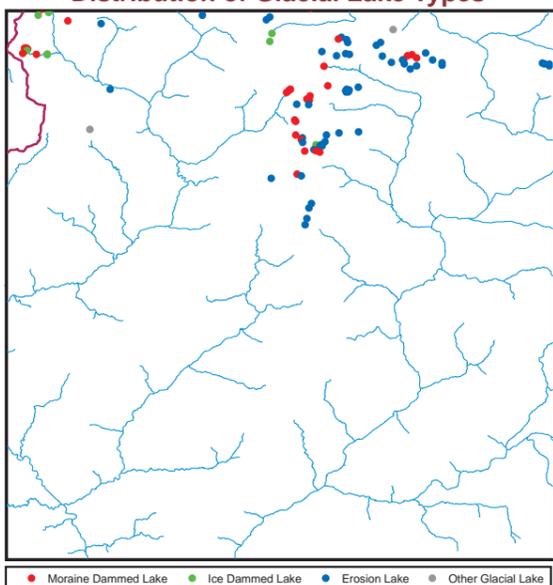〜 **Subbasin Boundary**   - - - **District Boundary**

DISCLAIMER:

(a) The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

(b) Satellite image depicts both Glacial Lakes and Water Bodies, but only glacial lakes were mapped
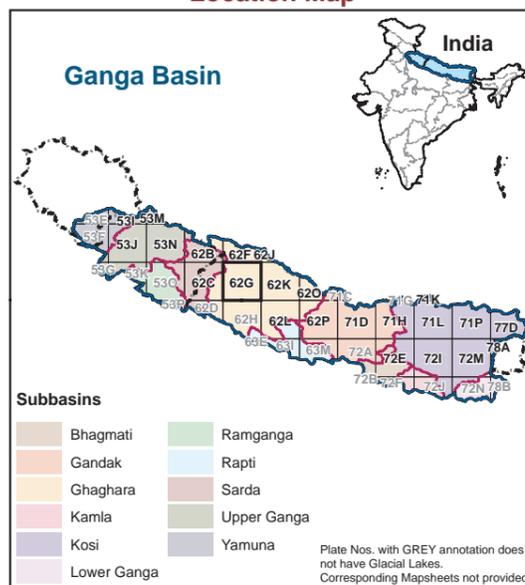
GLACIAL LAKES IN PART OF GANGA BASIN

State: Sikkim, West Bengal	Map 46	Plate No: 78A

Kosi

North Sikkim

West Sikkim

East Sikkim

South Sikkim

Darjiling

Kalimpong

Lower Ganga

Data Source: Resourcesat-2 LISS-IV

0   5   10   20
Km

Distribution of Glacial Lake Types

- Moraine Dammed Lake
- Ice Dammed Lake
- Erosion Lake
- Other Glacial Lake

Location Map

India

Ganga Basin

Subbasins

Bhagmati	Ramganga
Gandak	Rapti
Ghaghara	Sarda
Kamla	Upper Ganga
Kosi	Yamuna
Lower Ganga	

Plate Nos. with GREY annotation does
not have Glacial Lakes.
Corresponding Mapsheets not provided.
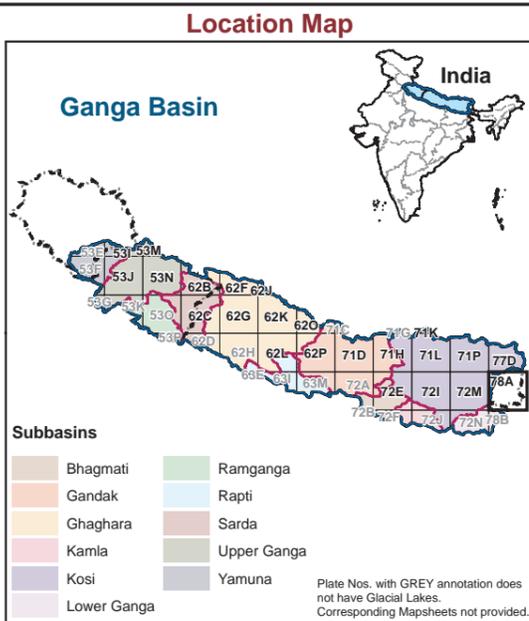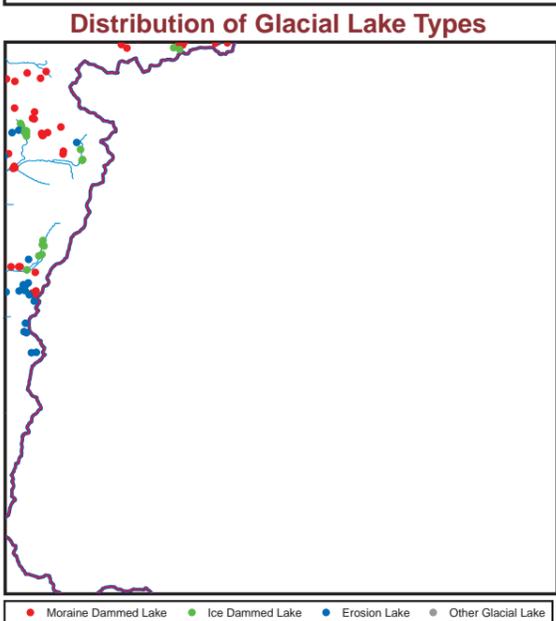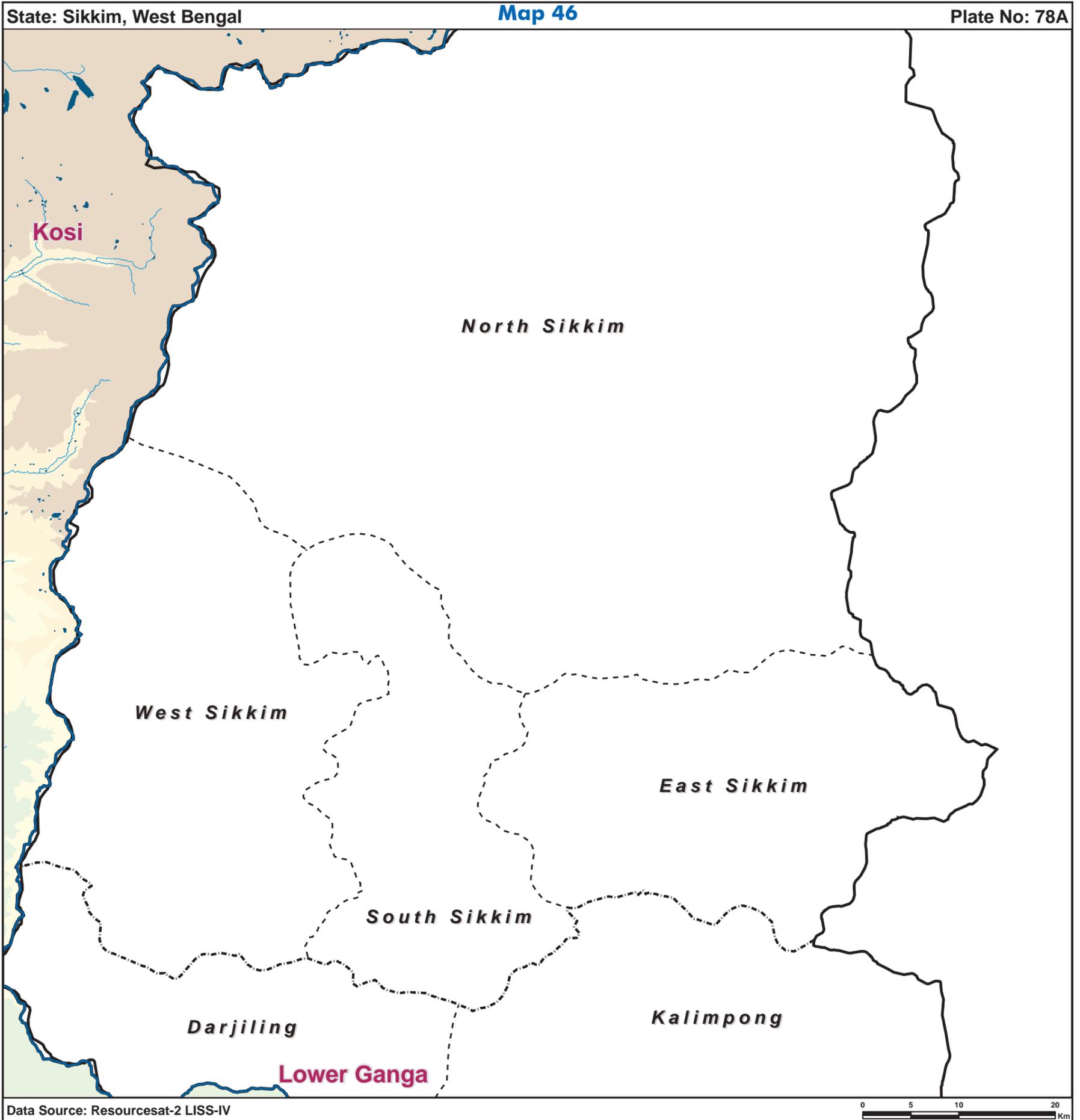
Elevation-wise Glacial Lake Distribution

S.No.	Elevation Range (m)	No. of Glacial Lakes	Glacial Lake Area (ha)
1	up to 3,000	0	0.0
2	3,001 - 4,000	0	0.0
3	4,001 - 5,000	22	30.9
4	> 5,000	51	388.8
	Total	73	419.6

Legend

Glacial Lake	District Boundary	**Elevation Range (m)**
River / Stream	State / UT Boundary	up to 3,000
Basin Boundary	International Boundary	3,001 - 4,000
Subbasin Boundary		4,001 - 5,000
		> 5,000

Prepared By:
Water Resources Group
National Remote Sensing Centre, ISRO
Department of Space, Government of India

Under:
National Hydrolgy Project
Department of Water Resources, RD & GR
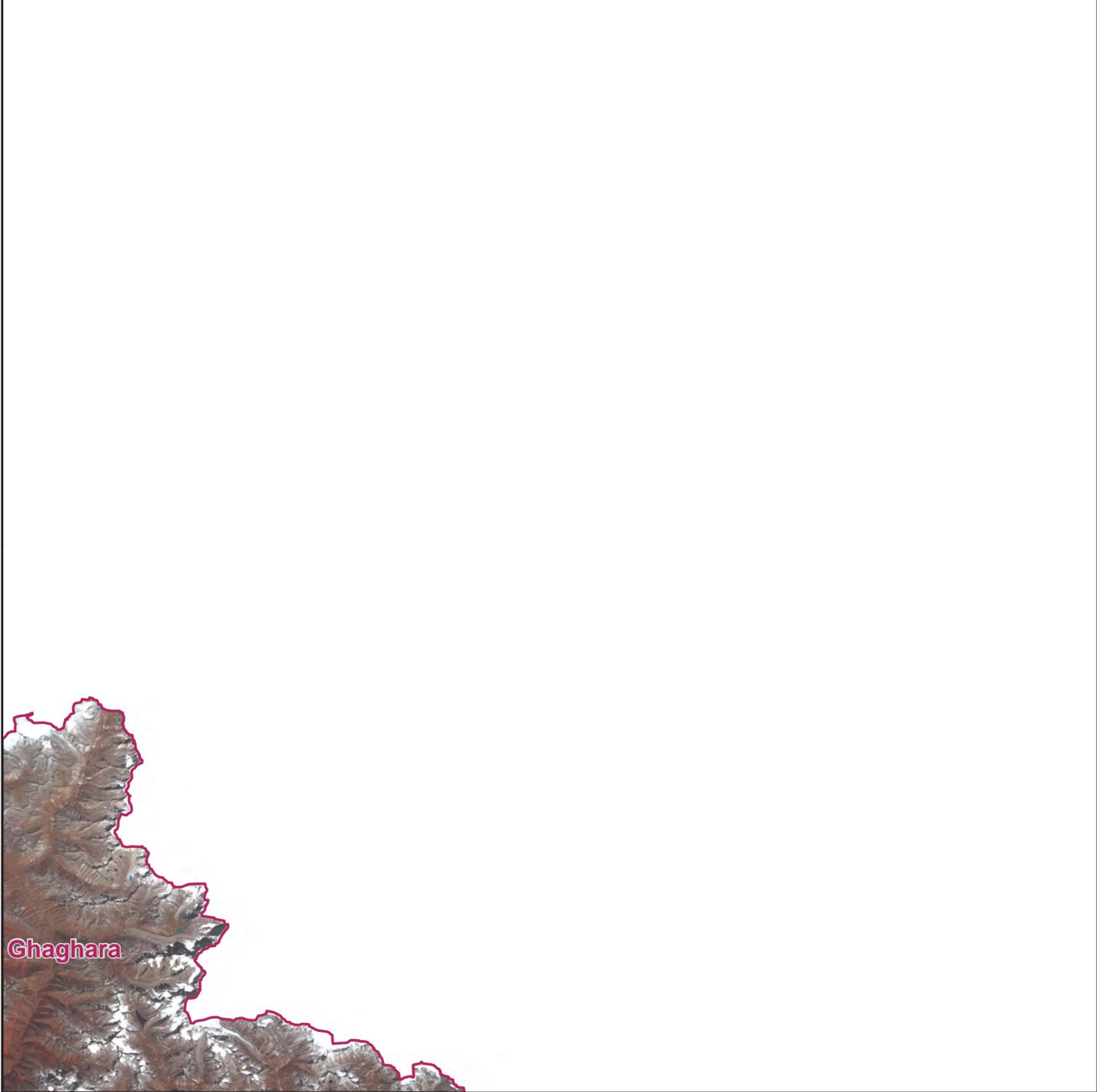Ministry of Jal Shakti, Government of India

DISCLAIMER: The Adminitrative Boundaries shown are for scientific study and not for statutory purpose

Ridge

Hill Shadow

Glacier

Lake

Glacial Lake (6.529 Km length) at the snout
of Glacier adjacent to Phurephu Ri Mountain Peak
as seen in FCC satellite image

Satellite: Resourcesat-2
Sensor: LISS-IV MX
Date of Image: 26.11.2016

References

Andre, C. (2017). "Atlas du Tibet" (5th Eds.). www.tibetmap.com

Bambari, B., Mehta, M., Dobhal, D.P., Gupta, A.K. (2015). "Glacier Lake Inventory of Uttarakhand". Center for Glaciology, Wadia Institute of Himalayan, Dehradun.

Berthier, E., Arnaud, Y., Kumar, R., Ahmad, S., Wagnon, P., Chevallier, P. (2007). "Remote sensing estimates of glacier mass balances in the Himachal Pradesh (Western Himalaya, India)". Remote Sensing of Environment, vol. 108(3), pp. 327-338. https://doi.org/10.1016/j.rse.2006.11.017

Bhagat, R.M., Kalia, V., Sood, C., Mool, P.K., Bajracharya, S. (2004). "Inventory of glaciers and glacial lakes and the identification of potential glacial lake outburst floods (GLOFs) affected by global warming in the mountains of the Himalayan region: Himachal Pradesh Himalaya, India". Unpublished project report, with database on CD-ROM, prepared for APN and ICIMOD, Kathmandu, by Himachal Pradesh Agricultural University, Palampur, India.

Bolch, T., Menounos, B., Wheate, R. (2010). "Landsat-based inventory of glaciers in western Canada, 1985-2005". Remote Sensing of Environment, vol. 114(1), pp. 127-137. https://doi.org/10.1016/j.rse.2009.08.015

Che, T., Xiao, L., Liou, Y.A. (2014). "Changes in Glaciers and Glacial Lakes and the Identification of Dangerous Glacial Lakes in the Pumqu River Basin, Xizang (Tibet)". Advances in Meteorology, vol. 2014, pp. 1-8. https://doi.org/10.1155/2014/903709

Clague, J.J. and Evans, S.G. (2000). "A review of catastrophic drainage of moraine-dammed lakes in British Columbia". Quaternary Science Reviews, vol. 19(17-18), pp. 1763-1783. https://doi.org/10.1016/S0277-3791(00)00090-1

Cogley, J.G. (2011). "Present and future states of Himalaya and Karakoram glaciers". Annals of Glaciology, vol. 52(59), pp. 69-73. https://doi.org/10.3189/172756411799096277

Cogley, J.G., Hock, R., Rasmussen, L.A., Arendt, A.A., Bauder, A., Braithwaite, R.J., Jansson, P., Kaser, G., Möller, M., Nicholson L., Zemp, M. (2011). "Glossary of Glacier Mass Balance and Related Terms", IHP-VII Technical Documents in Hydrology No. 86, IACS Contribution No. 2, UNESCO-IHP, Paris.

CWC (2019). Basin Details: Indus Basin Organisation - Description about Indus Basin and its Sub Basins. http://cwc.gov.in/ibo/about-basins (page last updated on 11.10.2019)

Emmer, A., Vilímek, V., Huggel, C., Klimes, J., Schaub, Y. (2016). "Limits and challenges to compiling and developing a database of glacial lake outburst floods". Landslides, vol. 13(6), pp. 1579-1584. https://doi.org/10.1007/s10346-016-0686-6

Emmer, A. (2017). "Glacier Retreat and Glacial Lake Outburst Floods (GLOFs)". Oxford Research Encyclopedia of Natural Hazard Science, pp. 1-37. https://doi.org/10.1093/acrefore/9780199389407.013.275

Ganga Basin Report (2014). India-Water Resources Information System: www.india-wris.nrsc.gov.in

Gardelle, J., Arnaud, Y., Berthier, E. (2011). "Contrasted evolution of glacial lakes along the Hindu Kush Himalaya mountain range between 1990 and 2009". Global and Planetary Change, vol. 75(1-2), pp. 47-55. https://doi.org/10.1016/j.gloplacha.2010.10.003

GCW (2016). "Global Cryosphere watch implementation plan", version 1.7. World Meteorological Organization. https://library.wmo.int/opac/doc_num.php?explnum_id=3538

Gupta, A., Guru, N., Maheshwari, R., Sweta, Rao, B.S. (2019). "Inventory of Glacial Lakes in Gilgit Subbasin of Indus Basin using high resolution satellite imagery". Journal of Indian Cartographer, vol. 38, pp. 212-219. https://incaindia.org/cartographic-volume/

Guru, N, Gupta, A., Sweta, Maheshwari, R., Rao, B.S., Raju, P.V., Rao, V.V. (2019). "Identification of potential lakes susceptible to GLOF in Jhelum Subbasin of Indus Basin". In: Naik GM et al., (Eds.), Hydraulics, Water Resources, Coastal and Environmental Engineering, Ch 155, pp. 1452-1462, BS Publications, Hyderabad, India.

Hewitt, K. (1982). "Natural dams and outburst floods of the Karakoram Himalaya". In: Glen, J.W. (Eds.), Hydrological Aspects of Alpine and High Mountain Area. Proceedings of the Exeter Symposium, July 1982: IAHS Publ. no. 138, pp. 259-269.

Huggel, C., Kääb, A., Haeberli, W., Teysseire, P., Paul, F. (2002). "Remote sensing based assessment of hazards from glacier lake outbursts: a case study in the Swiss Alps". Canadian Geotechnical Journal, vol. 39(2), pp. 316-330. https://doi.org/10.1139/t01-099

Huggel, C., Kääb, A., Salzmann, N. (2006). "Evaluation of QuickBird and Ikonos Imagery for Assessment of High-Mountain Hazards". In: EARSeL eProceedings, vol. 5(1), pp. 51-62. https://doi.org/10.5167/uzh-77921

Husain, M. (2012). "Geography of India". Tata McGraw-Hill Education. ISBN: 978-1-25-900089-8

Ives, J.D., Shrestha, R.B., Mool, P.K. (2010). "Formation of Glacial Lakes in the Hindu-Kush Himalayas and GLOF Risk Assessment". ICIMOD, Kathmandu, Nepal.

Kääb, A. (2000). "Photogrammetry for early recognition of high mountain hazards: new techniques and applications". Physics and Chemistry of the Earth, Part B: Hydrology, Oceans and Atmosphere, vol. 25(9), pp. 765-770. https://doi.org/10.1016/S1464-1909(00)00099-X

Kääb, A., Huggel, C., Paul, F., Wessels, R., Raup, B., Kieffer, H., Kargel, J. (2002). "Glacier monitoring from ASTER imagery: accuracy and applications". In: Proceedings of EARSeL-LISSIG-workshop observing our cryosphere from space, vol. 2, pp. 43-53.

Kirkbride, M.P. (2011). "Debris-covered glaciers". In Singh, V.P. et al., (Eds.). "Encyclopedia of snow, ice and glaciers". Dordrecht: Springer Science + Business Media B.V., pp. 190-191.

Komori, J. (2007). "Recent expansions of glacial lakes in the Bhutan Himalayas". Quaternary International, vol. 184(1), pp. 177-186. https://doi.org/10.1016/j.quaint.2007.09.012

Kulkarni, A.V. (1991). "Glacier inventory in Himachal Pradesh using satellite data". Journal of Indian Society of Remote Sensing, vol. 19(3), pp. 195-203. https://doi.org/10.1007/BF03030771

Liu, C. and Sharma, C.K. (1988). "Report on the first expedition to glaciers and Glacier Lake in the Pumqu (Arun) and Poiqu (Bhote-Kosi) River Basins, Xizang (Tibet)". Science Press (Eds.), Beijing, China.

Maharjan, S.B., Mool, P.K., Lizong, W., Xiao, G., Shrestha, F., Shrestha, R.B., Khanal, N.R., Bajracharya, S.R., Joshi, S., Shai, S., Baral, P. (2018). "The status of glacial lakes in the Hindu Kush Himalaya". ICIMOD Research Report 2018/1. ICIMOD, Kathmandu, Nepal.

Mergili, M., Müller, J.P., Schneider, J.F. (2013). "Spatio-temporal development of high mountain lakes in the headwaters of the Amu Darya River (Central Asia)". Global and Planetary Change, vol. 107, pp. 13-24. https://doi.org/10.1016/j.gloplacha.2013.04.001

Mool, P.K., Bajracharya, S.R., Joshi, S.P. (2001a). "Inventory of Glaciers, Glacial Lakes, and Glacial Lake Outburst Floods: Monitoring and early warning systems in the Hindu Kush-Himalayan Regions - Nepal". ICIMOD, Kathmandu, Nepal. ISBN: 92-9115-331-1, pp. 1-365.

Mool, P.K., Wangda, D., Bajracharya, S.R., Kunzang, K., Gurung, D.R., Joshi, S.P. (2001b). "Inventory of Glaciers, Glacial Lakes, and Glacial Lake Outburst Floods: Monitoring and early warning systems in the Hindu Kush-Himalayan Region - Bhutan". ICIMOD, Kathmandu, Nepal. ISBN: 92-9115-345-1, pp. 1-227.

Mool, P.K. and Bajracharya, S.R. (2003). "Inventory of Glaciers, Glacial Lakes and the Identification of Potential Glacial Lake Outburst Floods (GLOFs) Affected by Global Warming in the Mountains of Himalayan Region: Tista Basin, Sikkim Himalaya, India". ICIMOD, Kathmandu, Nepal, pp. 1-134.

Nagai, H., Ukita, J., Narama, C., Fujita, K., Sakai, A., Tadono, T., Yamanokuchi, T. and Tomiyama, N. (2017). "Evaluating the Scale and Potential of GLOF in the Bhutan Himalayas Using a Satellite-Based Integral Glacier-Glacial Lake Inventory". Geosciences, vol. 7(3), 77, pp. 1-18. https://doi.org/10.3390/geosciences7030077

Nie, Y., Liu, Q., Liu, S. (2013). "Glacial lake expansion in the central Himalayas by Landsat images, 1990-2010". PLoS One, vol. 8(12), e83973. https://doi.org/10.1371/journal.pone.0083973

Nie, Y., Sheng, Y., Liu, Q., Liu, L., Liu, S., Zhang, Y., Song, C. (2017). "A regional-scale assessment of Himalayan glacial lake changes using satellite observations from 1990 to 2015". Remote Sensing of Environment, vol. 189, pp. 1-13. https://doi.org/10.1016/j.rse.2016.11.008

NRSC (2011). "Inventory and Monitoring of Glacial Lakes/Water Bodies in the Himalayan Region of Indian River Basins". National Remote Sensing Centre, ISRO, Hyderabad, India, pp. 1-98.

Panda, R., Padhee, S.K., Dutta, S. (2014). "GLOF Study in Tawang River Basin, Arunachal Pradesh, India". In: The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, vol. XL-8, pp. 101-109. https://doi.org/10.5194/isprsarchives-XL-8-101-2014

Pandey, A. (2019). Glossary. In: Wester et al., (Eds.). "The Hindu Kush Himalaya Assessment". Springer Nature, pp. 579-607. https://doi.org/10.1007/978-3-319-92288-1

Panigrahy, S., Patel, J.G., Parihar, J.S. (2012). "National Wetland Atlas: High Altitude Lakes of India" (Eds). Space Application Centre, ISRO, Ahmedabad, India, pp. 1-108.

Pratap, B., Dobhal, D.P., Bhambri, R., Mehta, M., Tewari, V.C. (2016). "Four decades of glacier mass balance observations in the Indian Himalaya". Regional Environmental Change, vol. 16(3), pp. 643-658. https://doi.org/10.1007/s10113-015-0791-4

Raj, K.B.G. (2010). "Remote sensing based hazard assessment of glacial lakes: a case study in Zanskar basin, Jammu and Kashmir, India". Geomatics, Natural Hazards and Risk, vol. 1(4), pp. 339-347. https://doi.org/10.1080/19475705.2010.532973

Raj, K.B.G., Kumar, K.V., Remya, S.N. (2013). "Remote sensing-based inventory of glacial lakes in Sikkim Himalaya: Semiautomated approach using satellite data". Geomatics, Natural Hazards and Risk, vol. 4(3), pp. 241-253. https://doi.org/10.1080/19475705.2012.707153

Rao, B.S., Gupta, A., Guru, N., Sweta., Maheshwari, R., Raju, P.V., Rao, V.V. (2020). "Glacial Lake Atlas of Indus River Basin". National Remote Sensing Centre, ISRO, Hyderabad, pp. 1-273. https://doi.org/10.13140/RG.2.2.26121.67687/2

Roohi, R., Ashraf, R., Naz, R., Hussain, S.A., Chaudhary, M.H. (2005). "Inventory of glaciers and glacial lakes outburst floods (GLOFs) affected by global warming in the mountains of Himalayan region, Indus Basin, Pakistan Himalaya". Report prepared for ICIMOD, Kathmandu, Nepal.

Rounce, D.R., Watson, C.S., McKinney, D.C. (2017). "Identification of hazard and risk for glacial lakes in the Nepal Himalaya using satellite imagery from 2000-2015". Remote Sensing, vol. 9(7), 654, pp. 1-18. https://doi.org/10.3390/rs9070654

Sah, M., Philip, G., Mool, P.K., Bajracharya, S., Shrestha, B. (2005). "Inventory of glaciers and glacial lakes and the identification of potential glacial lake outburst floods (GLOFs) affected by global warming in the mountains of Himalayan region: Uttaranchal Himalaya, India". Unpublished project report, with database on CD-ROM, prepared for APN and ICIMOD, Kathmandu.

Shugar, D.H., Burr, A., Haritashya, U.K., Kargel, J.S., Watson, C.S., Kennedy, M.C., Bevington, A.R., Betts, R.A., Harrison, S., Strattman, K. (2020). "Rapid worldwide growth of glacial lakes since 1990". Nature Climate Change, vol. 10, pp. 939-945. https://doi.org/10.1038/s41558-020-0855-4

U.S. Army Map Service (1955). "University of Texas Libraries, India and Pakistan 1:250,000, Series U505". http://legacy.lib.utexas.edu/maps/ams/india

UNFCCC (2013). "Reporting and accounting of LULUCF activities under the Kyoto Protocol". United Nations Framework Convention on Climatic Change (UNFCCC), Bonn, Germany. http://unfccc.int/methods/lulucf/items/4129.php

UNISDR (2017). "Terminology on disaster risk reduction". https://www.unisdr.org/we/inform/terminology

Wagnon, P., Linda, A., Arnaud, Y., Kumar, R., Sharma, P., Vincent, C., Pottakkal, J.G., Berthier, E., Ramanathan, A., Hasnain, S.I., Chevallier, P. (2007). "Four years of mass balance on Chhota Shigri Glacier, Himachal Pradesh, India, a new benchmark glacier in the Western Himalaya". Journal of Glaciology, vol. 53(183), pp. 603-611. https://doi.org/10.3189/002214307784409306

Wang, W., Yao, T., Gao, Y., Yang, X., Kattel, D.B. (2011). "A First-order Method to Identify Potentially Dangerous Glacial Lakes in a Region of the Southeastern Tibetan Plateau". Mountain Research and Development, vol. 31(2), pp. 122-130. https://doi.org/10.1659/MRD-JOURNAL-D-10-00059.1

Wang, W., Yang, X., Yao, T. (2012). "Evaluation of ASTER GDEM and SRTM and their suitability in hydraulic modelling of a glacial lake outburst flood in southeast Tibet". Hydrological Processes, vol. 26(2), pp. 213-225. https://doi.org/10.1002/hyp.8127

Wang, X., Ding, Y., Liu, S., Jiang, L., Wu, K., Jiang, Z., Guo, W. (2013). "Changes of glacial lakes and implications in Tian Shan, central Asia, based on remote sensing data from 1990 to 2010". Environmental Research Letters, vol. 8(4), p.044052. https://doi.org/10.1088/1748-9326/8/4/044052

Wang, X., Siegert, F., Zhou, A., Franke, J. (2013). "Glacier and glacial lakes changes and their relationship in the context of climate change, Central Tibetan Plateau 1972-2010". Global and Planetary Change, vol. 111, pp. 246-257. https://doi.org/10.1016/j.gloplacha.2013.09.011

Wangchuk, S., Bolch, T., Zawadzki, J. (2019). "Towards automated mapping and monitoring of potentially dangerous glacial lakes in Bhutan Himalaya using Sentinel-1 Synthetic Aperture Radar data". International Journal of Remote Sensing, vol. 40(12), pp. 4642-4667.

Worni, R., Huggel, C., Stoffel, M. (2013). "Glacial lakes in the Indian Himalayas-from an area-wide glacial lake inventory to on-site and modeling based risk assessment of critical glacial lakes". Science of the Total Environment, vol. 468-469, Supplement, pp. S71-S84. https://doi.org/10.1016/j.scitotenv.2012.11.043

Wu, L., Che, T., Jin, R., Li, X., Gong, T., Xie, Y., Mool, P.K., Bajracharya, S., Shrestha, B., Joshi, S. (2005). "Inventory of glaciers, glacial lakes and the identification of potential glacial lake outburst floods (GLOFs) affected by global warming in the mountains of Himalayan region: Pumqu, Rongxer, Poiqu, Zangbuqin, Jilongcangbu, Majiacangbu, Daoliqu, and Jiazhagangge basins, Tibet Autonomous Region, People's Republic of China". Unpublished project report, with database on CD-ROM, prepared for APN and ICIMOD, Kathmandu.

Yao, X., Liu, S., Han, L., Sun, M., Zhao, L. (2018). "Definition and classification of glacial lake for inventory and hazards study". Journal of Geographical Sciences, vol. 28(2), pp. 193-205. https://doi.org/10.1007/s11442-018-1467-z

Zhang, G., Yao, T., Xie, H., Wang, W., Yang, W. (2015). "An inventory of glacial lakes in the Third Pole region and their changes in response to global warming". Global and Planetary Change, vol. 131, pp. 148-157. https://doi.org/10.1016/j.gloplacha.2015.05.013

Annexure - I: Automatic Identification and Mapping of Glacial Lakes

Overview:

There are several automatic and semi-automatic glacial lake mapping method reported in the literature, but no method produce good and accurate results of mapping. Kääb et al. (2002), attempted the automatic classification of glacial lakes using Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) data, but the algorithm was not robust enough to be applied to other images except ASTER images. Using LANDSAT images, Huggel et al. (2002) suggested the Normalized Difference Water Index (NDWI) according to theory low water reflectance in the NIR band and high reflectance in blue band but glacial lakes get misclassified as shadow area using this method.

Wangchuk et al. (2019), delineated glacial lakes using Sentinel-1 SAR images, a semi-automated approach, based on a radar signal intensity threshold between water and non-water feature classes followed by post-processing including elevations, slopes, vegetation and size thresholds, but drawback still persist as lakes which are severely affected by the wind and waves that increase the roughness and thus the backscatter would neither be identified correctly, partially or at all, due to the use of a single threshold. Hence, to ensure correct classifications of lakes, visual inspection of images and quality control is required for final accurate results.

Mapping methods:

The NDWI, which provides an automatic way to detect water bodies including glacial lakes was adopted by many researchers for inventorying purpose. It is a ratio combining two different spectral bands that enhance water spectral signals by contrasting the reflectance between different wavelengths and removing a large portion of noise components in different wavelengths, can be expressed as:

$$NDWI = (Green\ Band - NIR\ Band) / (Green\ Band + NIR\ Band)$$

Other than NDWI, two more pixel-based classification techniques i.e. supervised (by giving homogeneous signature sites) and unsupervised (by giving certain number of feature classes to classify based on spectral behavior) classification techniques can also be applied. Object-based classification using eCognition software can also be done using various factors like by giving threshold values and suitable membership functions, by including indices like NDWI, Normalized Difference Vegetation Index (NDVI) and Normalized Difference Glacier Index (NDGI), and by using layers such as slope and NIR band.

Mapping results:

A study was attempted using RS-2 LISS-IV data to compare the mapping accuracy of lakes using 4 automated methods (NDWI, Supervised, Unsupervised and Object based) with visual interpretation method. All four automatic mapping methods along with visual interpretation technique were used in an area which has deep water bodies and snow covered glacial lakes along with shadowed region (upper mountainous parts of Teesta basin). Using NDWI method, most of lakes got classified, but it also classify shadow areas as water pixels due to the similar spectral reflectance conditions. Even if the threshold value of NDWI is changed in such a way that all water pixels

in a lake should get classified, many deep water bodies and shadowed portions having same spectral reflectance values will get misclassified as water pixels or in some glacial lakes water pixels are missing.

Unsupervised classification technique misclassifies not only shadows as lakes, but also some part of glaciers that are in retreating condition and having similar spectral reflectance values of lakes (light blue in colour). In supervised classification output, with good amount of signature sites, cloud/mountain shadows are classified as water pixels. Overall, using pixel-based classification methods, it is difficult to distinguish between deep water bodies and shadows as they have same spectral reflectance values. Pixel-based classified output of all three methods along with the total area of lakes in the study area is shown in Figure 91.
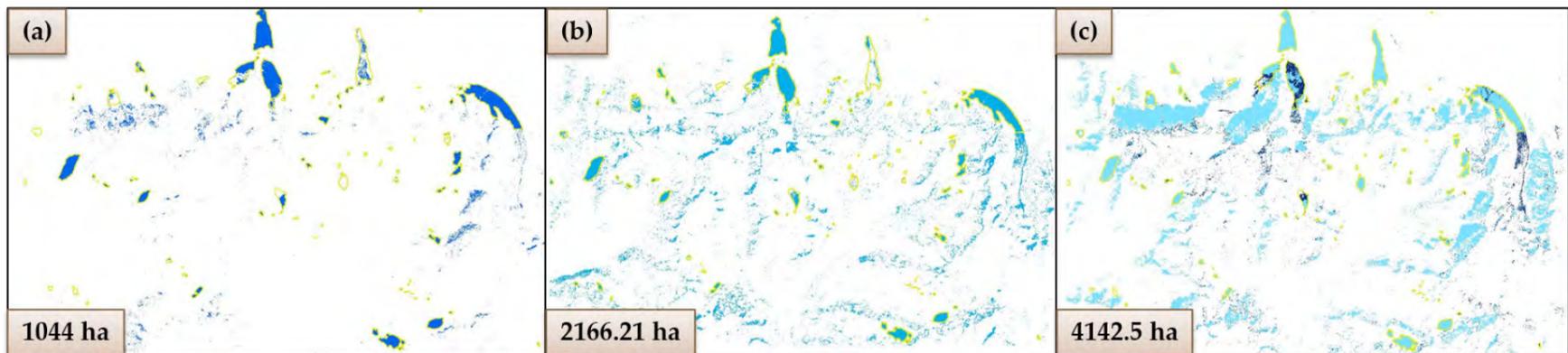
Figure 91: Pixel-based classified output (a): NDWI, (b): Supervised, (c): Unsupervised

Using object-based classification method, along with various layers like slope (as the glacial lakes are located at higher elevation) and NIR band, results misclassification of shadows, though it is less in comparison to the pixel-based classified output, but at many locations water pixels are not classified. Also, if we compare the areas of lakes that is being classified using automatic method that with the area of manually mapped lakes, automatic mapped lakes has huge difference and extent of misclassification, which need to be corrected again using visual interpretation method. Figure 92 shows the comparison of the glacial lake extents of object-based classification and manual mapping using visual interpretation keys.
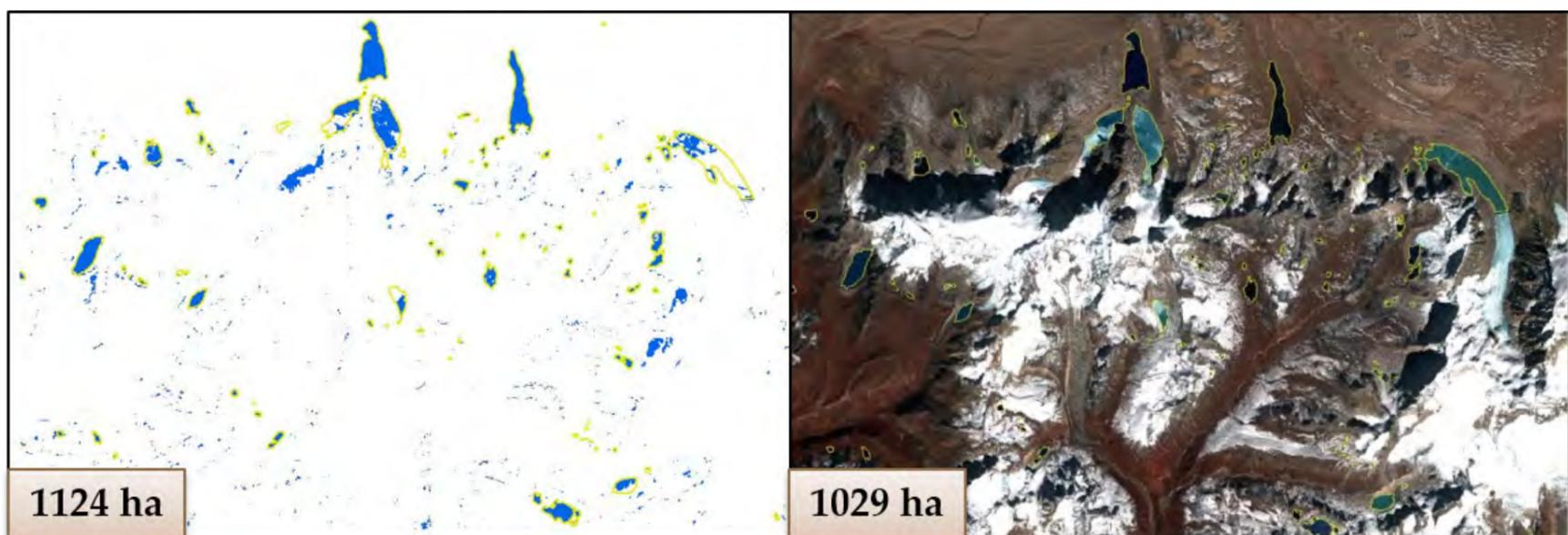
Figure 92: Object-based classified output and manual mapping output

Annexure - II: List of Glacial Lakes

Each lake is given a unique ID, formatted in 12 alpha-numeric character. First two digit of ID refers to the basin code, next five character refers to the SOI 250K and 50K Toposheet No., and the last five digit refers to the sequential number of each lake sorted from top left to bottom right. For example:

0253I0300001			
	53I03		00001
02	53I	03	
Basin Code	SOI 250K Toposheet No.	SOI 50K Toposheet No.	Lake No.

Table 74 shows the list of all glacial lakes mapped in the Ganga River basin along with few important attributes.

Table 74: List of Glacial Lakes of the Ganga River Basin with few important attributes

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
1	0253I0300001	31.398	78.089	Yamuna	E(o)	3.22	4,673	51	0253J0900051	30.981	78.519	Yamuna	M(o)	0.89	4,807
2	0253I0300002	31.345	78.142	Yamuna	E(o)	1.22	4,523	52	0253J0900052	30.979	78.522	Yamuna	M(o)	0.32	4,796
3	0253I0300003	31.329	78.185	Yamuna	E(c)	3.37	4,437	53	0253J0900053	30.978	78.520	Yamuna	M(o)	0.62	4,847
4	0253I0300004	31.323	78.182	Yamuna	E(c)	8.26	4,493	54	0253J1300054	30.919	78.962	Upper Ganga	I(s)	2.08	4,664
5	0253I0300005	31.320	78.165	Yamuna	E(o)	2.67	4,427	55	0253J1300055	30.912	78.958	Upper Ganga	M(l)	6.00	4,707
6	0253I0300006	31.319	78.242	Yamuna	E(o)	0.37	4,438	56	0253J1300056	30.911	78.771	Upper Ganga	E(c)	3.15	4,822
7	0253I0400007	31.238	78.241	Yamuna	E(o)	0.35	4,331	57	0253J1300057	30.892	78.819	Upper Ganga	M(l)	3.26	4,643
8	0253I0400008	31.231	78.211	Yamuna	E(o)	10.66	4,264	58	0253J1300058	30.888	78.828	Upper Ganga	M(o)	0.92	4,704
9	0253I0700009	31.300	78.279	Yamuna	M(o)	0.28	4,414	59	0253J1300059	30.888	78.835	Upper Ganga	M(e)	0.70	4,769
10	0253I0700010	31.284	78.302	Yamuna	E(o)	0.35	4,981	60	0253J1300060	30.881	78.981	Upper Ganga	I(s)	0.32	4,896
11	0253I0700011	31.275	78.283	Yamuna	E(o)	0.33	4,557	61	0253J1300061	30.835	78.947	Upper Ganga	E(o)	0.77	4,948
12	0253I0700012	31.274	78.312	Yamuna	E(o)	0.70	4,862	62	0253J1300062	30.789	78.958	Upper Ganga	O	1.11	3,707
13	0253I0700013	31.273	78.315	Yamuna	E(o)	0.40	4,836	63	0253J1300063	30.751	78.985	Upper Ganga	M(o)	0.84	4,742
14	0253I0700014	31.269	78.339	Yamuna	M(e)	1.26	4,885	64	0253J1300064	30.751	78.988	Upper Ganga	M(l)	0.99	4,770
15	0253I0700015	31.265	78.305	Yamuna	M(o)	0.58	4,680	65	0253J1300065	30.751	78.970	Upper Ganga	E(o)	2.35	4,521
16	0253I0700016	31.264	78.253	Yamuna	E(o)	0.98	4,396	66	0253J1400066	30.748	78.977	Upper Ganga	E(o)	6.08	4,560
17	0253I0700017	31.262	78.272	Yamuna	E(o)	0.76	4,800	67	0253J1400067	30.747	78.847	Upper Ganga	E(o)	1.65	4,545
18	0253I0700018	31.260	78.255	Yamuna	E(c)	15.10	4,403	68	0253J1400068	30.746	78.987	Upper Ganga	M(e)	25.56	4,734
19	0253I0800019	31.242	78.254	Yamuna	M(o)	0.95	4,586	69	0253J1400069	30.745	78.844	Upper Ganga	E(o)	0.56	4,589
20	0253I0800020	31.228	78.347	Yamuna	E(o)	2.07	4,557	70	0253J1400070	30.733	78.799	Upper Ganga	E(o)	1.11	4,491
21	0253I0800021	31.210	78.402	Yamuna	I(s)	0.28	4,252	71	0253J1400071	30.731	78.934	Upper Ganga	E(c)	0.58	4,343
22	0253I0800022	31.209	78.405	Yamuna	I(s)	0.33	4,263	72	0253J1400072	30.726	78.808	Upper Ganga	E(o)	7.08	4,620
23	0253I0800023	31.209	78.297	Yamuna	E(o)	0.69	4,301	73	0253J1400073	30.724	78.997	Upper Ganga	E(o)	1.41	4,697
24	0253I0800024	31.201	78.299	Yamuna	E(o)	0.38	4,537	74	0253J1400074	30.722	78.816	Upper Ganga	E(o)	1.88	4,545
25	0253I0800025	31.185	78.348	Yamuna	O	0.80	3,760	75	0253J1400075	30.722	78.995	Upper Ganga	E(o)	4.43	4,559
26	0253I0800026	31.185	78.343	Yamuna	O	0.28	3,734	76	0253J1400076	30.719	78.814	Upper Ganga	E(o)	6.83	4,569
27	0253I0800027	31.184	78.344	Yamuna	O	0.36	3,745	77	0253M0300077	31.379	79.014	Upper Ganga	M(e)	4.00	5,380
28	0253I0800028	31.179	78.406	Yamuna	E(o)	0.72	4,799	78	0253M0300078	31.298	79.011	Upper Ganga	M(o)	3.25	5,331
29	0253I0800029	31.081	78.458	Yamuna	O	0.59	3,599	79	0253M0300079	31.267	79.226	Upper Ganga	M(o)	2.10	5,469
30	0253I0800030	31.078	78.380	Yamuna	E(o)	3.31	4,367	80	0253M0400080	31.225	79.155	Upper Ganga	M(e)	1.27	5,510
31	0253I0800031	31.011	78.487	Yamuna	E(o)	1.27	4,698	81	0253M0400081	31.224	79.167	Upper Ganga	E(c)	0.99	5,533
32	0253I1200032	31.174	78.628	Upper Ganga	M(o)	5.64	4,510	82	0253M0400082	31.221	79.152	Upper Ganga	M(o)	0.28	5,513
33	0253I1200033	31.163	78.649	Upper Ganga	E(o)	0.39	4,689	83	0253M0400083	31.211	79.166	Upper Ganga	E(o)	1.64	5,523
34	0253I1200034	31.152	78.526	Yamuna	I(s)	0.41	4,326	84	0253M0400084	31.195	79.165	Upper Ganga	M(o)	0.44	5,460
35	0253I1200035	31.151	78.522	Yamuna	I(s)	0.30	4,286	85	0253M0400085	31.191	79.150	Upper Ganga	M(e)	7.89	5,365
36	0253I1200036	31.144	78.687	Upper Ganga	O	0.42	3,849	86	0253M0400086	31.189	79.146	Upper Ganga	M(e)	1.73	5,355
37	0253I1500037	31.299	78.867	Upper Ganga	M(o)	1.14	5,270	87	0253M0400087	31.179	79.000	Upper Ganga	M(o)	0.27	5,219
38	0253I1500038	31.280	78.896	Upper Ganga	M(o)	0.35	5,265	88	0253M0400088	31.178	79.154	Upper Ganga	E(c)	3.12	5,560
39	0253I1500039	31.279	78.833	Upper Ganga	M(o)	0.25	5,238	89	0253M0400089	31.175	79.000	Upper Ganga	M(o)	0.35	5,146
40	0253I1500040	31.271	78.827	Upper Ganga	E(o)	0.50	5,283	90	0253M0400090	31.042	79.242	Upper Ganga	M(o)	0.29	5,360
41	0253I1500041	31.270	78.939	Upper Ganga	M(o)	5.23	4,695	91	0253M0400091	31.039	79.237	Upper Ganga	M(o)	0.48	5,423
42	0253I1500042	31.259	78.911	Upper Ganga	M(o)	0.51	5,164	92	0253M0800092	31.168	79.273	Upper Ganga	M(o)	0.63	5,433
43	0253I1500043	31.253	78.938	Upper Ganga	M(o)	0.28	5,117	93	0253M0800093	31.152	79.267	Upper Ganga	M(e)	4.59	5,427
44	0253I1600044	31.233	78.857	Upper Ganga	M(o)	0.83	5,259	94	0253M0800094	31.142	79.260	Upper Ganga	M(e)	1.71	5,488
45	0253I1600045	31.203	78.957	Upper Ganga	M(o)	0.93	5,262	95	0253M0800095	31.138	79.309	Upper Ganga	M(e)	1.08	5,671
46	0253I1600046	31.199	78.851	Upper Ganga	E(o)	1.16	4,607	96	0253M0800096	31.129	79.328	Upper Ganga	M(l)	0.69	5,715
47	0253I1600047	31.183	78.794	Upper Ganga	E(o)	0.55	4,599	97	0253M0800097	31.128	79.307	Upper Ganga	M(o)	0.54	5,648
48	0253I1600048	31.178	78.967	Upper Ganga	E(o)	0.70	5,288	98	0253M0800098	31.064	79.287	Upper Ganga	M(e)	1.04	5,390
49	0253I1600049	31.177	78.872	Upper Ganga	O	1.17	4,446	99	0253M0800099	31.062	79.415	Upper Ganga	M(o)	0.69	5,549
50	0253I1600050	31.104	78.897	Upper Ganga	M(o)	0.92	4,974	100	0253M0800100	31.060	79.410	Upper Ganga	M(o)	3.28	5,525

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
101	0253M0800101	31.060	79.414	Upper Ganga	M(o)	3.17	5,519	174	0253N0500174	30.968	79.467	Upper Ganga	I(s)	0.41	5,589
102	0253M0800102	31.059	79.396	Upper Ganga	E(c)	2.28	5,634	175	0253N0500175	30.967	79.362	Upper Ganga	M(e)	3.08	5,477
103	0253M0800103	31.054	79.407	Upper Ganga	M(o)	2.10	5,479	176	0253N0500176	30.965	79.493	Upper Ganga	M(o)	0.40	5,413
104	0253M0800104	31.053	79.412	Upper Ganga	M(e)	1.58	5,537	177	0253N0500177	30.964	79.386	Upper Ganga	M(o)	1.28	5,323
105	0253M0800105	31.047	79.400	Upper Ganga	O	4.37	5,440	178	0253N0500178	30.964	79.461	Upper Ganga	M(o)	0.96	5,441
106	0253M0800106	31.046	79.403	Upper Ganga	O	0.93	5,436	179	0253N0500179	30.962	79.462	Upper Ganga	M(o)	0.59	5,443
107	0253M0800107	31.043	79.397	Upper Ganga	O	0.27	5,427	180	0253N0500180	30.954	79.359	Upper Ganga	M(o)	0.38	5,571
108	0253M0800108	31.042	79.393	Upper Ganga	O	0.67	5,401	181	0253N0500181	30.951	79.310	Upper Ganga	M(o)	0.73	5,638
109	0253M0800109	31.033	79.274	Upper Ganga	M(o)	0.39	5,262	182	0253N0500182	30.950	79.309	Upper Ganga	M(o)	0.92	5,622
110	0253M0800110	31.029	79.375	Upper Ganga	E(o)	0.39	5,425	183	0253N0500183	30.948	79.341	Upper Ganga	M(e)	2.20	5,579
111	0253M0800111	31.026	79.360	Upper Ganga	M(o)	0.58	5,465	184	0253N0500184	30.946	79.314	Upper Ganga	M(o)	0.56	5,610
112	0253M0800112	31.025	79.350	Upper Ganga	M(o)	0.90	5,490	185	0253N0500185	30.945	79.490	Upper Ganga	I(s)	0.82	5,088
113	0253M0800113	31.025	79.363	Upper Ganga	M(o)	1.54	5,473	186	0253N0500186	30.939	79.482	Upper Ganga	I(s)	0.35	4,988
114	0253M0800114	31.024	79.352	Upper Ganga	M(o)	0.26	5,490	187	0253N0500187	30.939	79.372	Upper Ganga	M(o)	0.40	5,511
115	0253M0800115	31.024	79.349	Upper Ganga	M(o)	0.25	5,480	188	0253N0500188	30.937	79.367	Upper Ganga	M(l)	0.67	5,554
116	0253M0800116	31.024	79.356	Upper Ganga	M(o)	1.04	5,433	189	0253N0500189	30.935	79.416	Upper Ganga	E(c)	1.60	5,296
117	0253M0800117	31.023	79.361	Upper Ganga	M(o)	3.34	5,463	190	0253N0500190	30.934	79.493	Upper Ganga	I(s)	0.42	4,964
118	0253M0800118	31.023	79.350	Upper Ganga	M(o)	0.76	5,469	191	0253N0500191	30.926	79.407	Upper Ganga	E(o)	0.90	5,439
119	0253M0800119	31.023	79.344	Upper Ganga	E(o)	0.34	5,462	192	0253N0500192	30.924	79.310	Upper Ganga	M(o)	0.92	5,561
120	0253M0800120	31.022	79.350	Upper Ganga	M(o)	0.37	5,455	193	0253N0500193	30.923	79.309	Upper Ganga	M(o)	0.59	5,574
121	0253M0800121	31.017	79.428	Upper Ganga	E(o)	0.67	5,687	194	0253N0500194	30.923	79.463	Upper Ganga	M(o)	0.27	4,745
122	0253M0800122	31.016	79.369	Upper Ganga	E(o)	0.60	5,385	195	0253N0500195	30.922	79.310	Upper Ganga	M(o)	0.68	5,560
123	0253M0800123	31.016	79.453	Upper Ganga	M(o)	0.98	5,689	196	0253N0500196	30.920	79.314	Upper Ganga	M(o)	1.97	5,514
124	0253M0800124	31.015	79.363	Upper Ganga	E(o)	0.89	5,392	197	0253N0500197	30.890	79.304	Upper Ganga	E(c)	2.31	5,350
125	0253M0800125	31.015	79.367	Upper Ganga	E(o)	0.35	5,391	198	0253N0500198	30.811	79.313	Upper Ganga	E(o)	0.34	5,245
126	0253M0800126	31.014	79.449	Upper Ganga	E(o)	2.14	5,703	199	0253N0500199	30.806	79.315	Upper Ganga	E(o)	0.87	5,220
127	0253M0800127	31.012	79.432	Upper Ganga	E(o)	1.12	5,626	200	0253N0500200	30.805	79.318	Upper Ganga	E(o)	0.53	5,220
128	0253M0800128	31.007	79.443	Upper Ganga	M(o)	0.63	5,586	201	0253N0500201	30.805	79.295	Upper Ganga	I(s)	0.34	4,697
129	0253M0800129	31.005	79.406	Upper Ganga	M(o)	1.98	5,529	202	0253N0500202	30.796	79.298	Upper Ganga	I(s)	0.32	4,645
130	0253M0800130	31.004	79.446	Upper Ganga	E(c)	0.52	5,583	203	0253N0500203	30.791	79.361	Upper Ganga	I(s)	0.28	4,273
131	0253M0800131	31.004	79.405	Upper Ganga	M(o)	0.45	5,534	204	0253N0500204	30.790	79.368	Upper Ganga	I(s)	0.64	4,228
132	0253M0800132	31.001	79.274	Upper Ganga	I(s)	0.68	5,403	205	0253N0500205	30.767	79.397	Upper Ganga	I(s)	0.34	4,033
133	0253N0100133	30.913	79.092	Upper Ganga	I(s)	0.37	4,241	206	0253N0500206	30.762	79.398	Upper Ganga	I(s)	0.53	4,028
134	0253N0100134	30.912	79.189	Upper Ganga	M(o)	0.68	5,204	207	0253N0500207	30.754	79.368	Upper Ganga	I(s)	0.25	4,274
135	0253N0100135	30.910	79.095	Upper Ganga	I(s)	0.36	4,257	208	0253N0500208	30.754	79.363	Upper Ganga	I(s)	0.25	4,292
136	0253N0100136	30.907	79.172	Upper Ganga	I(s)	0.76	4,906	209	0253N0500209	30.750	79.361	Upper Ganga	I(s)	0.30	4,319
137	0253N0100137	30.894	79.096	Upper Ganga	I(s)	0.49	4,369	210	0253N0600210	30.746	79.351	Upper Ganga	I(s)	0.27	4,388
138	0253N0100138	30.888	79.098	Upper Ganga	I(s)	0.76	4,403	211	0253N0600211	30.744	79.337	Upper Ganga	I(s)	0.25	4,465
139	0253N0100139	30.881	79.098	Upper Ganga	I(s)	0.27	4,427	212	0253N0600212	30.744	79.357	Upper Ganga	M(l)	0.91	4,342
140	0253N0100140	30.868	79.099	Upper Ganga	I(s)	0.30	4,483	213	0253N0600213	30.655	79.298	Upper Ganga	E(o)	1.65	4,813
141	0253N0100141	30.858	79.110	Upper Ganga	I(s)	0.35	4,534	214	0253N0600214	30.610	79.455	Upper Ganga	E(o)	0.49	4,677
142	0253N0100142	30.856	79.110	Upper Ganga	I(s)	0.27	4,542	215	0253N0600215	30.607	79.458	Upper Ganga	E(o)	1.38	4,609
143	0253N0100143	30.847	79.114	Upper Ganga	I(s)	2.24	4,610	216	0253N0600216	30.607	79.448	Upper Ganga	E(o)	0.26	4,475
144	0253N0100144	30.834	79.114	Upper Ganga	I(s)	0.71	4,639	217	0253N0600217	30.604	79.325	Upper Ganga	E(c)	6.56	4,371
145	0253N0100145	30.826	79.126	Upper Ganga	I(s)	0.53	4,679	218	0253N0900218	30.970	79.747	Upper Ganga	M(o)	0.29	5,450
146	0253N0100146	30.817	79.128	Upper Ganga	I(s)	0.35	4,706	219	0253N0900219	30.945	79.709	Upper Ganga	I(s)	0.31	5,093
147	0253N0100147	30.808	79.150	Upper Ganga	I(s)	0.46	4,784	220	0253N0900220	30.937	79.690	Upper Ganga	M(o)	0.30	5,399
148	0253N0100148	30.807	79.123	Upper Ganga	M(l)	3.49	4,731	221	0253N0900221	30.937	79.689	Upper Ganga	M(o)	0.62	5,389
149	0253N0100149	30.806	79.154	Upper Ganga	I(s)	0.78	4,790	222	0253N0900222	30.935	79.504	Upper Ganga	I(s)	0.28	5,063
150	0253N0100150	30.804	79.126	Upper Ganga	E(o)	0.44	4,733	223	0253N0900223	30.933	79.684	Upper Ganga	I(s)	0.47	5,208
151	0253N0100151	30.804	79.157	Upper Ganga	I(s)	0.60	4,803	224	0253N0900224	30.929	79.723	Upper Ganga	I(s)	0.28	4,885
152	0253N0100152	30.758	79.059	Upper Ganga	I(s)	0.36	4,037	225	0253N0900225	30.928	79.713	Upper Ganga	I(s)	0.37	4,970
153	0253N0100153	30.758	79.057	Upper Ganga	I(s)	0.32	4,051	226	0253N0900226	30.923	79.739	Upper Ganga	I(s)	0.49	4,808
154	0253N0200154	30.742	79.010	Upper Ganga	E(c)	3.03	4,761	227	0253N0900227	30.918	79.740	Upper Ganga	I(s)	0.55	4,760
155	0253N0200155	30.734	79.034	Upper Ganga	E(o)	1.06	4,537	228	0253N0900228	30.916	79.541	Upper Ganga	M(o)	2.71	5,385
156	0253N0200156	30.726	79.038	Upper Ganga	E(c)	8.59	4,221	229	0253N0900229	30.910	79.746	Upper Ganga	I(s)	6.08	4,717
157	0253N0200157	30.722	79.127	Upper Ganga	E(o)	3.10	4,467	230	0253N0900230	30.909	79.539	Upper Ganga	M(o)	5.11	5,349
158	0253N0200158	30.660	79.249	Upper Ganga	E(c)	0.55	4,479	231	0253N0900231	30.905	79.736	Upper Ganga	I(s)	1.72	4,713
159	0253N0500159	30.995	79.292	Upper Ganga	M(l)	0.65	5,553	232	0253N0900232	30.904	79.747	Upper Ganga	I(s)	11.05	4,683
160	0253N0500160	30.995	79.410	Upper Ganga	M(e)	0.28	5,457	233	0253N0900233	30.903	79.732	Upper Ganga	I(s)	0.41	4,733
161	0253N0500161	30.995	79.409	Upper Ganga	M(o)	0.46	5,461	234	0253N0900234	30.903	79.674	Upper Ganga	M(o)	1.14	5,441
162	0253N0500162	30.994	79.354	Upper Ganga	M(o)	1.81	5,402	235	0253N0900235	30.901	79.746	Upper Ganga	I(s)	11.41	4,689
163	0253N0500163	30.993	79.356	Upper Ganga	M(o)	0.75	5,365	236	0253N0900236	30.898	79.748	Upper Ganga	M(o)	0.98	4,697
164	0253N0500164	30.992	79.303	Upper Ganga	M(l)	1.94	5,578	237	0253N0900237	30.895	79.718	Upper Ganga	I(s)	0.33	4,842
165	0253N0500165	30.991	79.359	Upper Ganga	M(o)	3.29	5,342	238	0253N0900238	30.891	79.528	Upper Ganga	M(o)	2.05	5,398
166	0253N0500166	30.984	79.350	Upper Ganga	E(o)	0.44	5,639	239	0253N0900239	30.891	79.704	Upper Ganga	I(s)	0.86	4,913
167	0253N0500167	30.982	79.341	Upper Ganga	M(o)	0.30	5,612	240	0253N0900240	30.890	79.713	Upper Ganga	I(s)	0.77	4,874
168	0253N0500168	30.982	79.368	Upper Ganga	M(o)	0.56	5,269	241	0253N0900241	30.888	79.737	Upper Ganga	M(o)	0.26	4,948
169	0253N0500169	30.981	79.488	Upper Ganga	M(o)	5.60	5,656	242	0253N0900242	30.886	79.525	Upper Ganga	E(c)	1.06	5,359
170	0253N0500170	30.981	79.367	Upper Ganga	M(o)	0.25	5,267	243	0253N0900243	30.884	79.669	Upper Ganga	I(s)	0.60	5,136
171	0253N0500171	30.978	79.364	Upper Ganga	I(s)	0.25	5,269	244	0253N0900244	30.881	79.532	Upper Ganga	I(s)	0.30	5,016
172	0253N0500172	30.976	79.482	Upper Ganga	M(o)	0.57	5,618	245	0253N0900245	30.875	79.547	Upper Ganga	M(o)	0.25	5,503
173	0253N0500173	30.976	79.460	Upper Ganga	M(e)	17.02	5,537	246	0253N0900246	30.875	79.550	Upper Ganga	E(o)	0.37	5,472

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
247	0253N0900247	30.870	79.736	Upper Ganga	I(s)	1.08	4,992	320	0253N1500320	30.347	79.933	Upper Ganga	I(s)	0.67	4,621
248	0253N0900248	30.870	79.733	Upper Ganga	I(s)	0.25	5,027	321	0253N1500321	30.318	79.915	Upper Ganga	I(s)	0.42	4,832
249	0253N0900249	30.869	79.552	Upper Ganga	E(o)	0.47	5,332	322	0253N1500322	30.312	79.928	Upper Ganga	E(o)	0.58	4,942
250	0253N0900250	30.868	79.514	Upper Ganga	I(s)	0.58	4,878	323	0253N1500323	30.266	79.836	Upper Ganga	I(s)	0.26	4,736
251	0253N0900251	30.840	79.525	Upper Ganga	I(s)	0.48	4,455	324	0253N1500324	30.266	79.838	Upper Ganga	I(s)	0.64	4,721
252	0253N0900252	30.838	79.526	Upper Ganga	I(s)	1.63	4,468	325	0253N1500325	30.263	79.837	Upper Ganga	I(s)	0.32	4,743
253	0253N0900253	30.800	79.707	Upper Ganga	I(s)	0.44	4,275	326	0253N1500326	30.262	79.854	Upper Ganga	I(s)	0.77	4,629
254	0253N0900254	30.794	79.712	Upper Ganga	I(s)	0.40	4,282	327	0253N1600327	30.238	79.999	Upper Ganga	O	0.41	3,701
255	0253N0900255	30.761	79.580	Upper Ganga	I(s)	0.50	4,375	328	0253N1600328	30.201	79.888	Upper Ganga	E(o)	0.76	4,278
256	0253N1000256	30.746	79.742	Upper Ganga	I(s)	0.29	4,556	329	0253N1600329	30.184	79.876	Upper Ganga	E(c)	4.67	4,462
257	0253N1000257	30.746	79.745	Upper Ganga	I(s)	0.32	4,545	330	0262B0200330	30.584	80.165	Upper Ganga	M(o)	3.29	5,078
258	0253N1000258	30.743	79.738	Upper Ganga	I(s)	0.50	4,586	331	0262B0200331	30.565	80.179	Sarda	M(e)	17.81	4,872
259	0253N1000259	30.730	79.574	Upper Ganga	E(c)	0.47	4,533	332	0262B0300332	30.484	80.156	Sarda	M(o)	0.54	5,061
260	0253N1000260	30.699	79.618	Upper Ganga	E(c)	9.74	4,138	333	0262B0300333	30.381	80.239	Sarda	M(o)	0.25	3,975
261	0253N1000261	30.639	79.695	Upper Ganga	M(l)	1.38	4,246	334	0262B0300334	30.380	80.237	Sarda	M(o)	0.39	3,954
262	0253N1000262	30.629	79.665	Upper Ganga	E(c)	7.52	4,361	335	0262B0400335	30.219	80.070	Upper Ganga	E(o)	1.35	4,469
263	0253N1000263	30.584	79.700	Upper Ganga	E(o)	0.56	4,686	336	0262B0400336	30.210	80.136	Sarda	E(c)	9.66	4,340
264	0253N1100264	30.334	79.678	Upper Ganga	E(o)	0.51	4,448	337	0262B0400337	30.181	80.158	Sarda	E(o)	0.52	4,571
265	0253N1100265	30.333	79.677	Upper Ganga	E(o)	0.39	4,466	338	0262B0600338	30.545	80.256	Sarda	E(o)	0.35	5,262
266	0253N1100266	30.329	79.678	Upper Ganga	E(o)	1.09	4,493	339	0262B0600339	30.541	80.283	Sarda	E(o)	0.72	5,176
267	0253N1200267	30.177	79.589	Upper Ganga	E(o)	0.74	3,231	340	0262B0600340	30.529	80.283	Sarda	M(o)	0.39	5,262
268	0253N1300268	30.988	79.751	Upper Ganga	E(c)	1.02	5,626	341	0262B0600341	30.509	80.411	Sarda	M(o)	0.57	5,110
269	0253N1300269	30.978	79.751	Upper Ganga	E(o)	0.29	5,538	342	0262B0700342	30.491	80.375	Sarda	E(c)	5.28	5,078
270	0253N1300270	30.908	79.825	Upper Ganga	E(c)	8.11	4,898	343	0262B0700343	30.475	80.333	Sarda	I(s)	0.28	4,580
271	0253N1300271	30.901	79.754	Upper Ganga	M(e)	22.04	4,677	344	0262B0700344	30.474	80.327	Sarda	I(s)	0.26	4,640
272	0253N1300272	30.899	79.751	Upper Ganga	M(o)	0.71	4,685	345	0262B0700345	30.469	80.315	Sarda	I(s)	0.46	4,717
273	0253N1300273	30.898	79.754	Upper Ganga	M(o)	1.69	4,680	346	0262B0700346	30.466	80.309	Sarda	I(s)	0.91	4,769
274	0253N1300274	30.897	79.757	Upper Ganga	M(o)	0.76	4,681	347	0262B0700347	30.458	80.369	Sarda	M(o)	0.54	4,406
275	0253N1300275	30.897	79.756	Upper Ganga	M(o)	0.26	4,684	348	0262B0700348	30.448	80.427	Sarda	M(o)	0.45	5,105
276	0253N1300276	30.879	79.944	Upper Ganga	E(o)	0.46	5,209	349	0262B0700349	30.446	80.387	Sarda	M(e)	10.00	4,306
277	0253N1300277	30.864	79.975	Upper Ganga	E(o)	0.29	4,664	350	0262B0700350	30.400	80.436	Sarda	O	0.28	3,887
278	0253N1300278	30.863	79.980	Upper Ganga	E(o)	0.42	4,704	351	0262B0700351	30.276	80.452	Sarda	M(o)	0.74	4,257
279	0253N1300279	30.837	79.905	Upper Ganga	E(c)	0.52	5,501	352	0262B1100352	30.456	80.516	Sarda	M(o)	3.05	5,249
280	0253N1300280	30.835	79.920	Upper Ganga	M(o)	0.26	5,183	353	0262B1100353	30.453	80.720	Ghaghara	M(o)	1.02	5,558
281	0253N1300281	30.830	79.894	Upper Ganga	M(e)	4.83	5,189	354	0262B1100354	30.452	80.722	Ghaghara	M(o)	0.31	5,536
282	0253N1300282	30.826	79.761	Upper Ganga	M(o)	0.86	4,915	355	0262B1100355	30.417	80.682	Sarda	E(c)	2.11	5,396
283	0253N1300283	30.826	79.920	Upper Ganga	M(o)	0.33	5,291	356	0262B1100356	30.409	80.510	Sarda	M(o)	0.70	4,725
284	0253N1300284	30.825	79.918	Upper Ganga	M(o)	0.31	5,297	357	0262B1100357	30.408	80.511	Sarda	M(o)	2.18	4,712
285	0253N1300285	30.823	79.772	Upper Ganga	M(o)	0.31	4,865	358	0262B1100358	30.392	80.532	Sarda	M(e)	11.21	4,753
286	0253N1300286	30.814	79.926	Upper Ganga	M(o)	5.02	4,944	359	0262B1100359	30.388	80.525	Sarda	M(o)	1.16	4,735
287	0253N1300287	30.811	79.921	Upper Ganga	M(e)	2.94	5,001	360	0262B1100360	30.382	80.576	Sarda	E(o)	2.61	5,385
288	0253N1300288	30.810	79.912	Upper Ganga	E(o)	1.16	5,125	361	0262B1100361	30.381	80.592	Sarda	M(o)	0.49	5,145
289	0253N1400289	30.750	79.754	Upper Ganga	I(s)	0.27	4,473	362	0262B1100362	30.373	80.603	Sarda	M(o)	1.19	4,822
290	0253N1400290	30.747	79.768	Upper Ganga	I(s)	0.30	4,368	363	0262B1100363	30.357	80.628	Sarda	M(o)	0.66	4,828
291	0253N1400291	30.701	79.782	Upper Ganga	I(s)	0.55	4,146	364	0262B1100364	30.354	80.655	Sarda	M(o)	5.48	4,504
292	0253N1400292	30.695	79.773	Upper Ganga	I(s)	0.84	4,232	365	0262B1100365	30.336	80.644	Sarda	M(o)	2.19	4,608
293	0253N1400293	30.567	79.893	Upper Ganga	I(s)	0.25	4,483	366	0262B1100366	30.324	80.590	Sarda	M(e)	1.13	4,345
294	0253N1400294	30.559	79.946	Upper Ganga	M(l)	0.43	4,698	367	0262B1100367	30.267	80.591	Sarda	M(o)	1.77	4,995
295	0253N1400295	30.557	79.893	Upper Ganga	I(s)	0.45	4,576	368	0262B1100368	30.264	80.713	Sarda	M(e)	2.27	4,525
296	0253N1400296	30.555	79.947	Upper Ganga	I(s)	0.42	4,684	369	0262B1200369	30.108	80.511	Sarda	E(o)	1.07	4,451
297	0253N1400297	30.551	79.950	Upper Ganga	I(s)	0.42	4,724	370	0262B1500370	30.412	80.763	Ghaghara	M(o)	4.17	5,557
298	0253N1400298	30.550	79.950	Upper Ganga	I(s)	0.35	4,714	371	0262B1500371	30.405	80.762	Ghaghara	M(o)	3.25	5,445
299	0253N1400299	30.541	79.938	Upper Ganga	M(o)	0.45	4,916	372	0262B1500372	30.402	80.784	Ghaghara	M(e)	43.35	5,088
300	0253N1400300	30.518	79.919	Upper Ganga	I(s)	0.28	5,367	373	0262B1500373	30.398	80.841	Ghaghara	M(o)	0.39	5,391
301	0253N1400301	30.501	79.988	Upper Ganga	I(s)	0.27	5,164	374	0262B1500374	30.366	80.892	Ghaghara	E(o)	0.92	5,624
302	0253N1500302	30.493	79.871	Upper Ganga	I(s)	0.35	5,420	375	0262B1500375	30.359	80.912	Ghaghara	E(o)	0.46	5,507
303	0253N1500303	30.485	79.875	Upper Ganga	I(s)	0.41	5,315	376	0262B1500376	30.359	80.915	Ghaghara	M(o)	0.97	5,533
304	0253N1500304	30.484	79.991	Upper Ganga	I(s)	0.29	5,068	377	0262B1500377	30.350	80.877	Ghaghara	E(o)	2.86	5,329
305	0253N1500305	30.483	79.932	Upper Ganga	I(s)	0.31	5,348	378	0262B1500378	30.349	80.888	Ghaghara	E(o)	0.43	5,262
306	0253N1500306	30.481	79.874	Upper Ganga	M(o)	3.35	5,288	379	0262B1500379	30.347	80.886	Ghaghara	E(o)	12.47	5,253
307	0253N1500307	30.480	79.987	Upper Ganga	I(s)	0.26	5,022	380	0262B1500380	30.335	80.760	Sarda	E(o)	0.30	5,070
308	0253N1500308	30.480	79.984	Upper Ganga	I(s)	0.27	5,008	381	0262B1500381	30.334	80.850	Ghaghara	M(o)	0.41	5,299
309	0253N1500309	30.476	79.986	Upper Ganga	I(s)	0.40	4,995	382	0262B1500382	30.301	80.904	Sarda	E(o)	1.08	5,356
310	0253N1500310	30.473	79.982	Upper Ganga	I(s)	0.27	4,954	383	0262B1500383	30.298	80.899	Sarda	E(c)	3.33	5,156
311	0253N1500311	30.472	79.986	Upper Ganga	I(s)	0.25	4,958	384	0262B1500384	30.283	80.852	Sarda	E(o)	0.29	5,314
312	0253N1500312	30.445	79.975	Upper Ganga	I(s)	0.27	4,631	385	0262B1500385	30.280	80.854	Sarda	E(o)	1.07	5,244
313	0253N1500313	30.435	79.961	Upper Ganga	I(s)	0.28	4,490	386	0262B1600386	30.055	80.984	Sarda	M(o)	0.63	4,173
314	0253N1500314	30.435	79.964	Upper Ganga	I(s)	0.27	4,500	387	0262B1600387	30.053	80.883	Sarda	M(l)	3.11	4,342
315	0253N1500315	30.424	79.976	Upper Ganga	I(s)	0.54	4,575	388	0262B1600388	30.049	80.887	Sarda	M(l)	2.01	4,414
316	0253N1500316	30.419	79.979	Upper Ganga	I(s)	0.69	4,613	389	0262B1600389	30.041	80.878	Sarda	M(l)	5.96	4,430
317	0253N1500317	30.417	79.976	Upper Ganga	I(s)	0.26	4,618	390	0262B1600390	30.035	80.883	Sarda	M(l)	0.29	4,457
318	0253N1500318	30.365	79.766	Upper Ganga	I(s)	0.63	4,685	391	0262C1300391	29.974	80.904	Sarda	M(l)	2.99	4,188
319	0253N1500319	30.349	79.914	Upper Ganga	E(o)	0.35	5,104	392	0262C1300392	29.962	80.975	Sarda	M(o)	0.51	4,174

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
393	0262C1300393	29.955	80.969	Sarda	M(o)	0.36	4,152	466	0262F0700466	30.363	81.364	Ghaghara	M(o)	0.93	5,724
394	0262C1300394	29.921	80.812	Sarda	E(o)	0.47	4,854	467	0262F0700467	30.362	81.386	Ghaghara	E(o)	4.75	5,616
395	0262C1300395	29.864	80.958	Sarda	E(o)	1.66	4,809	468	0262F0700468	30.360	81.415	Ghaghara	E(o)	0.66	5,708
396	0262C1300396	29.862	80.955	Sarda	E(o)	3.18	4,724	469	0262F0700469	30.357	81.440	Ghaghara	M(e)	2.86	5,507
397	0262F0300397	30.373	81.238	Ghaghara	E(o)	0.29	5,484	470	0262F0700470	30.356	81.428	Ghaghara	O	0.37	5,722
398	0262F0300398	30.369	81.241	Ghaghara	M(o)	0.64	5,416	471	0262F0700471	30.354	81.334	Ghaghara	E(o)	0.57	5,855
399	0262F0300399	30.368	81.239	Ghaghara	M(o)	0.35	5,423	472	0262F0700472	30.353	81.351	Ghaghara	M(o)	1.77	5,837
400	0262F0300400	30.291	81.099	Ghaghara	E(o)	0.78	4,134	473	0262F0700473	30.347	81.332	Ghaghara	I(s)	1.45	5,757
401	0262F0300401	30.288	81.122	Ghaghara	E(o)	1.04	4,058	474	0262F0700474	30.343	81.389	Ghaghara	E(o)	1.76	5,765
402	0262F0400402	30.189	81.017	Sarda	E(o)	0.71	4,934	475	0262F0700475	30.343	81.413	Ghaghara	E(o)	30.39	5,734
403	0262F0400403	30.147	81.099	Ghaghara	M(e)	1.92	5,211	476	0262F0700476	30.343	81.462	Ghaghara	M(o)	0.99	5,466
404	0262F0400404	30.139	81.101	Ghaghara	M(e)	0.52	5,020	477	0262F0700477	30.342	81.467	Ghaghara	M(o)	0.44	5,442
405	0262F0400405	30.077	81.051	Sarda	I(s)	0.43	4,280	478	0262F0700478	30.342	81.458	Ghaghara	M(o)	1.96	5,469
406	0262F0400406	30.077	81.207	Ghaghara	O	0.33	4,304	479	0262F0700479	30.340	81.465	Ghaghara	M(e)	1.80	5,439
407	0262F0400407	30.074	81.236	Ghaghara	E(o)	0.85	5,297	480	0262F0700480	30.339	81.462	Ghaghara	M(o)	0.26	5,465
408	0262F0400408	30.068	81.067	Sarda	I(s)	0.79	4,452	481	0262F0700481	30.338	81.399	Ghaghara	E(o)	1.85	5,718
409	0262F0400409	30.066	81.212	Ghaghara	O	0.26	4,498	482	0262F0700482	30.329	81.418	Ghaghara	I(s)	2.06	5,705
410	0262F0400410	30.063	81.214	Ghaghara	O	0.84	4,511	483	0262F0700483	30.324	81.406	Ghaghara	M(o)	1.02	5,731
411	0262F0400411	30.063	81.217	Ghaghara	O	1.82	4,523	484	0262F0700484	30.323	81.486	Ghaghara	M(o)	1.38	5,313
412	0262F0400412	30.061	81.218	Ghaghara	O	0.44	4,525	485	0262F0700485	30.322	81.376	Ghaghara	M(e)	13.96	5,542
413	0262F0400413	30.056	81.196	Ghaghara	I(s)	0.85	4,474	486	0262F0700486	30.321	81.358	Ghaghara	M(o)	0.25	5,436
414	0262F0400414	30.048	81.185	Ghaghara	I(s)	0.97	4,609	487	0262F0700487	30.320	81.450	Ghaghara	M(e)	3.15	5,486
415	0262F0400415	30.043	81.178	Ghaghara	I(s)	0.25	4,665	488	0262F0700488	30.319	81.414	Ghaghara	M(o)	1.24	5,621
416	0262F0400416	30.042	81.243	Ghaghara	M(o)	0.92	5,017	489	0262F0700489	30.319	81.445	Ghaghara	M(o)	12.20	5,497
417	0262F0400417	30.042	81.182	Ghaghara	I(s)	0.27	4,641	490	0262F0700490	30.318	81.423	Ghaghara	M(o)	0.28	5,567
418	0262F0400418	30.040	81.182	Ghaghara	I(s)	0.26	4,656	491	0262F0700491	30.317	81.448	Ghaghara	M(e)	5.13	5,477
419	0262F0400419	30.039	81.177	Ghaghara	I(s)	1.26	4,668	492	0262F0700492	30.315	81.360	Ghaghara	M(e)	4.15	5,476
420	0262F0400420	30.038	81.179	Ghaghara	I(s)	0.66	4,670	493	0262F0700493	30.314	81.399	Ghaghara	M(e)	9.47	5,631
421	0262F0400421	30.038	81.181	Ghaghara	I(s)	0.44	4,667	494	0262F0700494	30.312	81.409	Ghaghara	M(e)	13.27	5,634
422	0262F0400422	30.034	81.149	Ghaghara	I(s)	0.26	4,912	495	0262F0700495	30.311	81.459	Ghaghara	M(o)	0.84	5,382
423	0262F0400423	30.034	81.175	Ghaghara	I(s)	0.75	4,702	496	0262F0700496	30.311	81.426	Ghaghara	M(o)	0.38	5,537
424	0262F0400424	30.033	81.146	Ghaghara	I(s)	0.59	4,915	497	0262F0700497	30.304	81.401	Ghaghara	M(o)	0.44	5,580
425	0262F0400425	30.032	81.175	Ghaghara	I(s)	0.34	4,723	498	0262F0700498	30.304	81.402	Ghaghara	M(o)	0.92	5,588
426	0262F0400426	30.032	81.137	Ghaghara	I(s)	0.38	4,971	499	0262F0700499	30.303	81.391	Ghaghara	M(o)	4.80	5,521
427	0262F0400427	30.031	81.172	Ghaghara	I(s)	0.44	4,721	500	0262F0700500	30.302	81.399	Ghaghara	M(e)	11.68	5,580
428	0262F0400428	30.030	81.168	Ghaghara	I(s)	0.35	4,779	501	0262F0700501	30.302	81.387	Ghaghara	M(o)	0.90	5,512
429	0262F0400429	30.024	81.092	Ghaghara	I(s)	0.58	4,827	502	0262F0700502	30.301	81.496	Ghaghara	E(o)	0.81	5,121
430	0262F0400430	30.021	81.094	Ghaghara	I(s)	0.50	4,813	503	0262F0700503	30.300	81.499	Ghaghara	E(o)	0.39	5,130
431	0262F0400431	30.021	81.085	Ghaghara	M(l)	0.49	4,821	504	0262F0700504	30.297	81.388	Ghaghara	M(e)	26.15	5,516
432	0262F0400432	30.020	81.080	Ghaghara	M(o)	0.29	4,817	505	0262F0700505	30.296	81.453	Ghaghara	M(o)	3.65	4,988
433	0262F0400433	30.007	81.065	Ghaghara	M(o)	0.70	4,902	506	0262F0700506	30.296	81.493	Ghaghara	E(o)	0.58	5,174
434	0262F0400434	30.001	81.065	Ghaghara	M(o)	3.29	4,749	507	0262F0700507	30.295	81.449	Ghaghara	M(o)	4.72	4,985
435	0262F0700435	30.461	81.336	Ghaghara	M(o)	0.94	6,014	508	0262F0700508	30.294	81.375	Ghaghara	M(e)	8.72	5,428
436	0262F0700436	30.431	81.311	Ghaghara	I(s)	0.27	5,859	509	0262F0700509	30.290	81.364	Ghaghara	M(e)	7.57	5,427
437	0262F0700437	30.430	81.314	Ghaghara	I(s)	1.11	5,852	510	0262F0700510	30.289	81.500	Ghaghara	E(o)	3.68	5,038
438	0262F0700438	30.430	81.324	Ghaghara	M(o)	0.60	5,931	511	0262F0700511	30.285	81.474	Ghaghara	M(o)	0.53	5,309
439	0262F0700439	30.429	81.317	Ghaghara	I(s)	0.96	5,852	512	0262F0700512	30.285	81.475	Ghaghara	M(o)	1.19	5,310
440	0262F0700440	30.426	81.367	Ghaghara	E(o)	0.96	5,779	513	0262F0700513	30.281	81.482	Ghaghara	E(o)	0.25	5,255
441	0262F0700441	30.424	81.330	Ghaghara	M(o)	12.68	5,807	514	0262F0700514	30.280	81.457	Ghaghara	M(o)	0.99	5,381
442	0262F0700442	30.424	81.371	Ghaghara	E(o)	7.07	5,745	515	0262F0700515	30.279	81.349	Ghaghara	M(o)	0.85	5,446
443	0262F0700443	30.423	81.367	Ghaghara	E(o)	0.86	5,791	516	0262F0700516	30.277	81.457	Ghaghara	M(lg)	0.56	5,433
444	0262F0700444	30.421	81.318	Ghaghara	I(s)	0.26	5,773	517	0262F0700517	30.272	81.483	Ghaghara	M(o)	0.56	5,208
445	0262F0700445	30.420	81.365	Ghaghara	E(o)	0.78	5,793	518	0262F0700518	30.270	81.481	Ghaghara	M(o)	0.41	5,265
446	0262F0700446	30.419	81.354	Ghaghara	E(c)	2.47	5,790	519	0262F0700519	30.268	81.438	Ghaghara	I(s)	3.08	5,273
447	0262F0700447	30.417	81.427	Ghaghara	O	17.88	5,496	520	0262F0700520	30.266	81.349	Ghaghara	M(e)	20.37	5,207
448	0262F0700448	30.415	81.326	Ghaghara	I(s)	0.25	5,717	521	0262F0800521	30.242	81.470	Ghaghara	M(o)	0.28	5,356
449	0262F0700449	30.413	81.322	Ghaghara	I(s)	0.55	5,701	522	0262F0800522	30.241	81.332	Ghaghara	M(e)	8.11	5,395
450	0262F0700450	30.412	81.323	Ghaghara	I(s)	0.46	5,679	523	0262F0800523	30.233	81.350	Ghaghara	M(e)	26.79	5,297
451	0262F0700451	30.411	81.323	Ghaghara	I(s)	0.56	5,685	524	0262F0800524	30.230	81.416	Ghaghara	M(l)	0.62	5,180
452	0262F0700452	30.407	81.423	Ghaghara	O	2.27	5,478	525	0262F0800525	30.228	81.415	Ghaghara	M(o)	1.25	5,108
453	0262F0700453	30.405	81.427	Ghaghara	O	11.18	5,472	526	0262F0800526	30.225	81.416	Ghaghara	M(e)	0.78	5,062
454	0262F0700454	30.404	81.452	Ghaghara	O	3.49	5,696	527	0262F0800527	30.221	81.406	Ghaghara	M(o)	0.78	5,392
455	0262F0700455	30.403	81.339	Ghaghara	E(o)	4.06	5,583	528	0262F0800528	30.219	81.336	Ghaghara	M(e)	3.52	5,279
456	0262F0700456	30.402	81.363	Ghaghara	E(o)	6.95	5,590	529	0262F0800529	30.213	81.383	Ghaghara	M(l)	4.39	5,428
457	0262F0700457	30.400	81.363	Ghaghara	E(o)	0.86	5,593	530	0262F0800530	30.213	81.373	Ghaghara	M(o)	0.53	5,519
458	0262F0700458	30.399	81.293	Ghaghara	M(o)	3.07	5,511	531	0262F0800531	30.212	81.371	Ghaghara	M(o)	0.87	5,522
459	0262F0700459	30.390	81.313	Ghaghara	I(s)	0.25	5,434	532	0262F0800532	30.211	81.361	Ghaghara	M(o)	1.84	5,568
460	0262F0700460	30.390	81.325	Ghaghara	E(o)	0.71	5,460	533	0262F0800533	30.113	81.351	Ghaghara	E(o)	0.87	4,886
461	0262F0700461	30.378	81.421	Ghaghara	E(o)	25.56	5,659	534	0262F0800534	30.080	81.293	Ghaghara	M(o)	1.23	5,081
462	0262F0700462	30.373	81.292	Ghaghara	M(o)	0.88	5,507	535	0262F0800535	30.034	81.334	Ghaghara	M(o)	0.25	4,968
463	0262F0700463	30.366	81.360	Ghaghara	E(o)	0.40	5,844	536	0262F0800536	30.033	81.335	Ghaghara	M(o)	0.65	4,967
464	0262F0700464	30.364	81.376	Ghaghara	E(o)	10.33	5,756	537	0262F0800537	30.030	81.296	Ghaghara	M(o)	0.42	5,123
465	0262F0700465	30.363	81.251	Ghaghara	M(o)	0.81	5,413	538	0262F0800538	30.021	81.367	Ghaghara	M(o)	1.22	5,010

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
539	0262F0800539	30.021	81.315	Ghaghara	M(o)	1.49	5,099	612	0262F1500612	30.346	81.861	Ghaghara	M(e)	15.56	5,431
540	0262F0800540	30.020	81.317	Ghaghara	M(e)	0.61	5,125	613	0262F1500613	30.346	81.876	Ghaghara	M(o)	0.39	5,448
541	0262F0800541	30.019	81.423	Ghaghara	M(o)	0.63	5,266	614	0262F1500614	30.345	81.831	Ghaghara	M(o)	10.48	5,520
542	0262F0800542	30.011	81.388	Ghaghara	E(c)	8.53	5,254	615	0262F1500615	30.345	81.846	Ghaghara	M(e)	2.53	5,507
543	0262F1100543	30.254	81.689	Ghaghara	O	27.78	4,264	616	0262F1500616	30.344	81.841	Ghaghara	E(o)	0.72	5,491
544	0262F1200544	30.433	80.682	Ghaghara	M(o)	0.61	5,373	617	0262F1500617	30.344	81.892	Ghaghara	M(e)	2.88	5,287
545	0262F1200545	30.406	81.721	Ghaghara	E(o)	0.45	5,329	618	0262F1500618	30.338	81.857	Ghaghara	M(l)	1.49	5,609
546	0262F1200546	30.388	81.566	Ghaghara	O	1.16	5,100	619	0262F1500619	30.338	81.913	Ghaghara	M(o)	28.20	5,135
547	0262F1200547	30.384	81.569	Ghaghara	O	1.60	5,099	620	0262F1500620	30.336	81.920	Ghaghara	M(e)	10.09	5,130
548	0262F1200548	30.378	81.574	Ghaghara	O	22.49	5,097	621	0262F1500621	30.333	81.871	Ghaghara	E(o)	0.41	5,682
549	0262F1200549	30.333	81.512	Ghaghara	E(o)	3.07	5,218	622	0262F1500622	30.332	81.868	Ghaghara	M(l)	0.31	5,651
550	0262F1200550	30.331	81.513	Ghaghara	E(o)	1.17	5,220	623	0262F1500623	30.330	81.964	Ghaghara	M(o)	0.43	5,358
551	0262F1200551	30.328	81.512	Ghaghara	E(o)	12.27	5,221	624	0262F1500624	30.329	81.833	Ghaghara	M(o)	2.77	5,614
552	0262F1200552	30.326	81.516	Ghaghara	E(o)	0.68	5,221	625	0262F1500625	30.327	81.815	Ghaghara	M(o)	0.54	5,544
553	0262F1200553	30.309	81.640	Ghaghara	E(o)	4.99	5,147	626	0262F1500626	30.327	81.823	Ghaghara	M(o)	0.56	5,621
554	0262F1200554	30.309	81.655	Ghaghara	E(o)	1.35	5,037	627	0262F1500627	30.326	81.818	Ghaghara	M(o)	3.28	5,522
555	0262F1200555	30.306	81.639	Ghaghara	E(o)	0.45	5,190	628	0262F1500628	30.326	81.836	Ghaghara	M(o)	1.15	5,577
556	0262F1200556	30.294	81.602	Ghaghara	E(o)	0.84	5,157	629	0262F1500629	30.325	81.873	Ghaghara	E(o)	3.73	5,632
557	0262F1200557	30.289	81.614	Ghaghara	M(o)	6.22	5,073	630	0262F1500630	30.325	81.813	Ghaghara	M(o)	2.37	5,514
558	0262F1200558	30.287	81.624	Ghaghara	M(o)	0.49	5,159	631	0262F1500631	30.324	81.833	Ghaghara	M(e)	11.65	5,571
559	0262F1200559	30.286	81.565	Ghaghara	E(o)	3.44	5,155	632	0262F1500632	30.323	81.914	Ghaghara	M(o)	0.72	5,414
560	0262F1200560	30.284	81.574	Ghaghara	E(o)	14.32	5,077	633	0262F1500633	30.323	81.811	Ghaghara	M(o)	0.92	5,503
561	0262F1200561	30.284	81.623	Ghaghara	M(o)	0.66	5,165	634	0262F1500634	30.320	81.975	Ghaghara	M(l)	0.69	5,377
562	0262F1200562	30.280	81.591	Ghaghara	M(o)	1.70	5,057	635	0262F1500635	30.317	81.922	Ghaghara	M(o)	1.25	5,432
563	0262F1200563	30.277	81.518	Ghaghara	M(o)	2.12	5,298	636	0262F1500636	30.314	81.902	Ghaghara	M(o)	0.43	5,347
564	0262F1200564	30.276	81.595	Ghaghara	M(o)	0.32	5,146	637	0262F1500637	30.313	81.876	Ghaghara	M(e)	10.69	5,546
565	0262F1200565	30.274	81.569	Ghaghara	M(o)	7.82	5,167	638	0262F1500638	30.307	81.866	Ghaghara	M(e)	10.94	5,492
566	0262F1200566	30.274	81.543	Ghaghara	E(o)	4.04	5,142	639	0262F1500639	30.302	81.872	Ghaghara	M(e)	7.17	5,542
567	0262F1200567	30.273	81.538	Ghaghara	E(o)	0.37	5,199	640	0262F1500640	30.302	81.865	Ghaghara	M(o)	1.98	5,566
568	0262F1200568	30.272	81.524	Ghaghara	M(o)	0.42	5,332	641	0262F1500641	30.301	81.843	Ghaghara	M(e)	9.27	5,350
569	0262F1200569	30.271	81.536	Ghaghara	M(o)	4.20	5,211	642	0262F1500642	30.301	81.886	Ghaghara	E(o)	0.56	5,605
570	0262F1200570	30.270	81.509	Ghaghara	M(o)	0.39	5,253	643	0262F1500643	30.299	81.889	Ghaghara	E(o)	0.28	5,591
571	0262F1200571	30.269	81.508	Ghaghara	M(o)	0.31	5,254	644	0262F1500644	30.299	81.828	Ghaghara	M(o)	0.26	5,328
572	0262F1200572	30.268	81.528	Ghaghara	M(o)	0.25	5,371	645	0262F1500645	30.298	81.985	Ghaghara	E(o)	1.21	5,339
573	0262F1200573	30.265	81.557	Ghaghara	E(c)	3.09	5,295	646	0262F1500646	30.291	81.892	Ghaghara	E(o)	0.36	5,480
574	0262F1200574	30.207	81.593	Ghaghara	E(o)	0.81	5,139	647	0262F1500647	30.290	81.810	Ghaghara	M(o)	7.18	5,325
575	0262F1200575	30.202	81.557	Ghaghara	M(o)	0.46	5,136	648	0262F1500648	30.289	81.838	Ghaghara	M(l)	2.17	5,486
576	0262F1200576	30.185	81.748	Ghaghara	M(o)	0.52	5,092	649	0262F1500649	30.287	81.822	Ghaghara	M(o)	1.88	5,659
577	0262F1200577	30.180	81.734	Ghaghara	M(o)	0.28	5,142	650	0262F1500650	30.286	81.785	Ghaghara	E(o)	2.04	5,363
578	0262F1200578	30.176	81.652	Ghaghara	M(o)	0.38	5,240	651	0262F1500651	30.284	81.873	Ghaghara	E(o)	3.93	5,620
579	0262F1200579	30.174	81.653	Ghaghara	M(o)	0.97	5,229	652	0262F1500652	30.282	81.870	Ghaghara	E(o)	0.92	5,591
580	0262F1200580	30.173	81.728	Ghaghara	E(o)	4.20	4,983	653	0262F1500653	30.281	81.857	Ghaghara	I(s)	2.72	5,605
581	0262F1200581	30.167	81.744	Ghaghara	E(o)	1.04	5,081	654	0262F1500654	30.281	81.866	Ghaghara	E(o)	0.25	5,576
582	0262F1200582	30.166	81.724	Ghaghara	E(o)	0.34	4,853	655	0262F1500655	30.281	81.870	Ghaghara	E(o)	0.41	5,575
583	0262F1200583	30.164	81.665	Ghaghara	M(o)	7.93	4,902	656	0262F1500656	30.280	81.869	Ghaghara	E(o)	1.28	5,571
584	0262F1200584	30.163	81.659	Ghaghara	M(o)	1.89	4,957	657	0262F1500657	30.278	81.880	Ghaghara	M(o)	1.01	5,545
585	0262F1200585	30.162	81.748	Ghaghara	M(o)	16.11	5,046	658	0262F1500658	30.277	81.877	Ghaghara	M(o)	5.46	5,526
586	0262F1200586	30.162	81.658	Ghaghara	M(o)	1.45	4,980	659	0262F1500659	30.268	81.872	Ghaghara	M(e)	8.03	5,417
587	0262F1200587	30.157	81.665	Ghaghara	M(o)	0.26	5,081	660	0262F1500660	30.265	81.920	Ghaghara	M(o)	2.29	5,080
588	0262F1200588	30.154	81.644	Ghaghara	M(o)	9.21	4,915	661	0262F1500661	30.258	81.904	Ghaghara	M(o)	0.32	5,437
589	0262F1200589	30.147	81.721	Ghaghara	O	2.50	4,555	662	0262F1500662	30.254	81.914	Ghaghara	M(o)	0.76	5,274
590	0262F1200590	30.141	81.693	Ghaghara	E(o)	2.96	4,605	663	0262F1500663	30.253	81.884	Ghaghara	M(l)	1.69	5,568
591	0262F1200591	30.140	81.685	Ghaghara	M(o)	21.34	4,655	664	0262F1500664	30.251	81.878	Ghaghara	I(s)	1.05	5,409
592	0262F1200592	30.134	81.649	Ghaghara	E(o)	0.29	4,660	665	0262F1600665	30.249	81.939	Ghaghara	E(o)	1.35	5,036
593	0262F1200593	30.134	81.624	Ghaghara	E(o)	1.42	4,710	666	0262F1600666	30.249	81.880	Ghaghara	I(s)	0.80	5,429
594	0262F1200594	30.123	81.701	Ghaghara	E(o)	2.07	4,746	667	0262F1600667	30.243	81.896	Ghaghara	M(o)	0.26	5,441
595	0262F1200595	30.123	81.663	Ghaghara	M(o)	0.96	4,902	668	0262F1600668	30.242	81.901	Ghaghara	M(o)	2.78	5,406
596	0262F1200596	30.118	81.663	Ghaghara	M(o)	2.82	4,808	669	0262F1600669	30.242	81.903	Ghaghara	M(o)	0.72	5,408
597	0262F1200597	30.111	81.680	Ghaghara	E(o)	2.73	4,259	670	0262F1600670	30.240	81.898	Ghaghara	M(o)	1.22	5,419
598	0262F1200598	30.105	81.740	Ghaghara	E(o)	0.62	4,772	671	0262F1600671	30.240	81.997	Ghaghara	E(o)	1.48	5,045
599	0262F1200599	30.104	81.737	Ghaghara	E(o)	0.43	4,725	672	0262F1600672	30.237	81.915	Ghaghara	E(o)	0.49	5,335
600	0262F1200600	30.006	81.510	Ghaghara	M(o)	0.44	5,228	673	0262F1600673	30.233	81.906	Ghaghara	M(o)	0.66	5,353
601	0262F1200601	30.003	81.554	Ghaghara	M(o)	1.11	4,897	674	0262F1600674	30.222	81.777	Ghaghara	M(e)	9.09	5,356
602	0262F1500602	30.371	81.838	Ghaghara	E(o)	0.27	5,707	675	0262F1600675	30.222	81.805	Ghaghara	M(o)	0.44	5,388
603	0262F1500603	30.369	81.860	Ghaghara	M(o)	1.31	5,650	676	0262F1600676	30.218	81.883	Ghaghara	M(o)	1.75	5,384
604	0262F1500604	30.367	81.850	Ghaghara	M(o)	0.82	5,764	677	0262F1600677	30.216	81.802	Ghaghara	M(e)	19.31	5,343
605	0262F1500605	30.365	81.867	Ghaghara	M(e)	1.69	5,591	678	0262F1600678	30.214	81.758	Ghaghara	M(e)	12.12	5,368
606	0262F1500606	30.352	81.897	Ghaghara	E(o)	1.11	5,712	679	0262F1600679	30.204	81.878	Ghaghara	M(e)	12.66	5,518
607	0262F1500607	30.350	81.948	Ghaghara	M(o)	1.16	5,558	680	0262F1600680	30.202	81.947	Ghaghara	E(o)	0.29	5,301
608	0262F1500608	30.349	81.906	Ghaghara	E(o)	1.37	5,520	681	0262F1600681	30.201	81.918	Ghaghara	M(o)	1.58	5,173
609	0262F1500609	30.348	81.874	Ghaghara	M(o)	7.77	5,442	682	0262F1600682	30.201	81.930	Ghaghara	M(o)	0.40	5,128
610	0262F1500610	30.346	81.885	Ghaghara	M(l)	0.66	5,395	683	0262F1600683	30.197	81.863	Ghaghara	M(l)	1.79	5,172
611	0262F1500611	30.346	81.880	Ghaghara	M(o)	0.26	5,414	684	0262F1600684	30.196	81.826	Ghaghara	M(o)	0.84	5,086

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
685	0262F1600685	30.191	81.788	Ghaghara	M(o)	0.44	5,451	758	0262G0900758	29.948	81.604	Ghaghara	M(o)	3.08	4,660
686	0262F1600686	30.190	81.786	Ghaghara	M(o)	1.15	5,442	759	0262G0900759	29.946	81.620	Ghaghara	E(o)	1.03	4,695
687	0262F1600687	30.189	81.792	Ghaghara	M(o)	1.03	5,423	760	0262G0900760	29.941	81.621	Ghaghara	E(o)	0.34	4,743
688	0262F1600688	30.189	81.800	Ghaghara	E(o)	0.39	5,363	761	0262G0900761	29.941	81.681	Ghaghara	E(o)	0.27	4,752
689	0262F1600689	30.188	81.824	Ghaghara	M(lg)	1.13	5,345	762	0262G0900762	29.936	81.674	Ghaghara	E(o)	11.23	4,569
690	0262F1600690	30.183	81.823	Ghaghara	M(l)	0.33	5,398	763	0262G0900763	29.924	81.574	Ghaghara	E(o)	3.86	4,570
691	0262F1600691	30.182	81.804	Ghaghara	M(o)	0.95	5,278	764	0262G0900764	29.920	81.618	Ghaghara	E(o)	0.34	4,548
692	0262F1600692	30.181	81.820	Ghaghara	M(o)	0.25	5,356	765	0262G0900765	29.919	81.625	Ghaghara	E(o)	0.64	4,485
693	0262F1600693	30.179	81.873	Ghaghara	M(l)	1.45	5,354	766	0262G0900766	29.919	81.739	Ghaghara	M(o)	1.78	4,650
694	0262F1600694	30.178	81.881	Ghaghara	M(o)	0.63	5,450	767	0262G0900767	29.917	81.601	Ghaghara	E(o)	2.51	4,503
695	0262F1600695	30.174	81.875	Ghaghara	M(l)	0.39	5,355	768	0262G0900768	29.917	81.730	Ghaghara	M(o)	0.25	4,896
696	0262F1600696	30.172	81.879	Ghaghara	M(l)	1.91	5,336	769	0262G0900769	29.916	81.684	Ghaghara	E(o)	0.35	4,752
697	0262F1600697	30.167	81.952	Ghaghara	M(o)	2.62	4,933	770	0262G0900770	29.913	81.747	Ghaghara	M(o)	0.66	4,788
698	0262F1600698	30.160	81.768	Ghaghara	E(o)	0.25	5,242	771	0262G0900771	29.910	81.723	Ghaghara	M(o)	0.61	4,909
699	0262F1600699	30.157	81.773	Ghaghara	M(o)	1.39	5,188	772	0262G0900772	29.909	81.721	Ghaghara	E(o)	0.42	4,900
700	0262F1600700	30.156	81.773	Ghaghara	E(o)	0.26	5,200	773	0262G0900773	29.905	81.701	Ghaghara	E(o)	1.16	4,633
701	0262F1600701	30.142	81.958	Ghaghara	E(o)	0.25	5,218	774	0262G0900774	29.902	81.724	Ghaghara	E(o)	0.31	4,753
702	0262F1600702	30.141	81.952	Ghaghara	E(o)	0.48	5,294	775	0262G0900775	29.898	81.747	Ghaghara	E(o)	12.90	4,692
703	0262F1600703	30.140	81.998	Ghaghara	M(o)	5.10	4,773	776	0262G0900776	29.898	81.578	Ghaghara	M(e)	28.51	3,581
704	0262F1600704	30.140	81.981	Ghaghara	M(o)	1.93	4,975	777	0262G0900777	29.892	81.735	Ghaghara	E(o)	5.50	4,529
705	0262F1600705	30.139	81.773	Ghaghara	M(o)	0.69	5,111	778	0262G0900778	29.862	81.585	Ghaghara	M(o)	2.05	4,665
706	0262F1600706	30.139	81.789	Ghaghara	M(o)	1.79	5,169	779	0262G0900779	29.860	81.641	Ghaghara	E(o)	5.61	4,596
707	0262F1600707	30.131	81.793	Ghaghara	M(o)	2.22	5,156	780	0262G0900780	29.856	81.620	Ghaghara	E(o)	0.59	4,378
708	0262F1600708	30.129	81.781	Ghaghara	M(e)	75.65	5,015	781	0262G0900781	29.856	81.517	Ghaghara	M(o)	0.86	4,081
709	0262F1600709	30.126	81.787	Ghaghara	E(o)	0.49	5,029	782	0262G0900782	29.855	81.516	Ghaghara	M(o)	0.29	4,076
710	0262F1600710	30.122	81.771	Ghaghara	E(o)	0.39	4,867	783	0262G0900783	29.855	81.624	Ghaghara	E(o)	1.17	4,921
711	0262F1600711	30.121	81.768	Ghaghara	E(o)	1.36	4,892	784	0262G0900784	29.854	81.618	Ghaghara	E(o)	1.32	4,123
712	0262F1600712	30.119	81.873	Ghaghara	M(o)	1.27	5,097	785	0262G0900785	29.853	81.515	Ghaghara	M(o)	1.30	4,053
713	0262F1600713	30.119	81.876	Ghaghara	E(c)	6.33	5,037	786	0262G0900786	29.851	81.623	Ghaghara	E(o)	1.72	4,583
714	0262F1600714	30.112	81.814	Ghaghara	M(o)	2.12	4,907	787	0262G0900787	29.851	81.619	Ghaghara	E(o)	1.57	4,482
715	0262F1600715	30.107	81.837	Ghaghara	M(o)	0.77	4,607	788	0262G0900788	29.850	81.511	Ghaghara	M(o)	1.68	3,998
716	0262F1600716	30.107	81.833	Ghaghara	M(o)	0.55	4,677	789	0262G0900789	29.844	81.553	Ghaghara	M(o)	1.41	4,983
717	0262F1600717	30.105	81.805	Ghaghara	M(o)	1.18	4,959	790	0262G0900790	29.838	81.551	Ghaghara	M(o)	0.80	4,998
718	0262F1600718	30.104	81.829	Ghaghara	M(e)	0.25	4,706	791	0262G0900791	29.838	81.547	Ghaghara	M(o)	0.25	4,952
719	0262F1600719	30.102	81.827	Ghaghara	M(o)	0.56	4,691	792	0262G0900792	29.836	81.552	Ghaghara	M(o)	2.82	4,994
720	0262F1600720	30.100	81.811	Ghaghara	M(o)	0.40	4,902	793	0262G0900793	29.828	81.529	Ghaghara	E(c)	0.33	4,907
721	0262F1600721	30.098	81.826	Ghaghara	M(e)	3.27	4,769	794	0262G0900794	29.828	81.550	Ghaghara	E(o)	0.56	4,878
722	0262F1600722	30.097	81.796	Ghaghara	M(o)	2.50	5,080	795	0262G0900795	29.800	81.525	Ghaghara	M(o)	1.40	4,890
723	0262F1600723	30.090	81.815	Ghaghara	M(o)	5.38	4,821	796	0262G0900796	29.798	81.527	Ghaghara	M(o)	0.93	4,904
724	0262F1600724	30.089	81.810	Ghaghara	E(o)	0.41	4,857	797	0262G0900797	29.778	81.641	Ghaghara	E(o)	4.38	4,589
725	0262F1600725	30.085	81.829	Ghaghara	M(o)	1.11	4,744	798	0262G0900798	29.777	81.605	Ghaghara	E(o)	1.30	4,522
726	0262F1600726	30.070	81.802	Ghaghara	E(o)	0.60	4,308	799	0262G0900799	29.773	81.527	Ghaghara	M(e)	49.99	4,576
727	0262F1600727	30.064	81.967	Ghaghara	M(o)	0.50	5,031	800	0262G0900800	29.773	81.583	Ghaghara	E(o)	3.40	4,583
728	0262F1600728	30.059	81.955	Ghaghara	O	11.43	4,440	801	0262G0900801	29.768	81.539	Ghaghara	E(o)	0.83	4,868
729	0262F1600729	30.057	81.941	Ghaghara	M(e)	13.87	4,564	802	0262G0900802	29.765	81.537	Ghaghara	M(o)	1.02	4,835
730	0262F1600730	30.049	81.942	Ghaghara	E(o)	2.32	4,633	803	0262G0900803	29.760	81.580	Ghaghara	E(o)	2.68	4,276
731	0262F1600731	30.034	81.886	Ghaghara	M(o)	0.37	4,746	804	0262G0900804	29.760	81.540	Ghaghara	E(o)	0.41	4,893
732	0262F1600732	30.030	81.856	Ghaghara	E(o)	1.49	4,394	805	0262G0900805	29.755	81.573	Ghaghara	E(o)	0.56	5,049
733	0262F1600733	30.027	81.867	Ghaghara	E(o)	0.43	4,146	806	0262G0900806	29.755	81.564	Ghaghara	I(s)	1.72	4,870
734	0262F1600734	30.024	81.935	Ghaghara	O	0.91	4,210	807	0262G0900807	29.754	81.571	Ghaghara	E(o)	0.90	5,023
735	0262F1600735	30.019	81.936	Ghaghara	O	2.66	4,161	808	0262G0900808	29.753	81.575	Ghaghara	E(o)	0.27	5,043
736	0262G0100736	29.996	81.078	Ghaghara	I(s)	1.26	4,629	809	0262G1000809	29.746	81.560	Ghaghara	E(o)	0.40	5,167
737	0262G0100737	29.990	81.059	Ghaghara	I(s)	0.82	4,784	810	0262G1000810	29.745	81.565	Ghaghara	E(o)	1.73	5,049
738	0262G0100738	29.980	81.113	Ghaghara	M(e)	2.01	5,125	811	0262G1000811	29.744	81.564	Ghaghara	M(o)	0.49	4,985
739	0262G0100739	29.975	81.173	Ghaghara	E(c)	3.79	4,337	812	0262G1000812	29.743	81.544	Ghaghara	M(o)	5.63	5,152
740	0262G0100740	29.931	81.035	Ghaghara	M(l)	9.22	4,905	813	0262G1000813	29.741	81.570	Ghaghara	M(o)	5.91	5,072
741	0262G0100741	29.931	81.038	Ghaghara	M(o)	0.64	4,922	814	0262G1000814	29.702	81.529	Ghaghara	M(o)	0.83	5,079
742	0262G0100742	29.929	81.040	Ghaghara	M(l)	0.68	4,872	815	0262G1000815	29.699	81.537	Ghaghara	E(o)	0.92	5,039
743	0262G0100743	29.926	81.038	Ghaghara	I(s)	0.36	4,841	816	0262G1000816	29.648	81.556	Ghaghara	E(c)	11.64	4,551
744	0262G0100744	29.921	81.031	Ghaghara	M(e)	18.61	4,821	817	0262G1000817	29.640	81.551	Ghaghara	E(o)	2.24	4,472
745	0262G0100745	29.920	81.075	Ghaghara	I(s)	0.60	4,419	818	0262G1000818	29.621	81.548	Ghaghara	E(c)	5.24	4,403
746	0262G0100746	29.920	81.056	Ghaghara	M(o)	1.00	4,604	819	0262G1000819	29.610	81.544	Ghaghara	E(c)	13.28	4,467
747	0262G0100747	29.918	81.075	Ghaghara	I(s)	0.83	4,422	820	0262G1300820	29.922	81.763	Ghaghara	E(o)	0.40	4,312
748	0262G0100748	29.856	81.190	Ghaghara	E(o)	0.94	3,598	821	0262G1300821	29.909	81.776	Ghaghara	E(o)	1.15	4,955
749	0262G0100749	29.783	81.153	Ghaghara	O	0.56	3,859	822	0262G1300822	29.904	81.793	Ghaghara	E(o)	0.39	4,921
750	0262G0500750	29.990	81.357	Ghaghara	E(c)	1.12	5,128	823	0262G1300823	29.903	81.975	Ghaghara	E(o)	3.06	4,261
751	0262G0500751	29.987	81.480	Ghaghara	E(o)	0.37	5,096	824	0262G1300824	29.902	81.979	Ghaghara	E(o)	3.38	4,286
752	0262G0500752	29.982	81.474	Ghaghara	E(o)	3.11	4,951	825	0262G1300825	29.901	81.988	Ghaghara	E(o)	0.43	4,411
753	0262G0500753	29.958	81.484	Ghaghara	I(s)	0.42	4,412	826	0262G1300826	29.900	81.793	Ghaghara	E(op)	0.73	4,852
754	0262G0500754	29.943	81.480	Ghaghara	I(s)	0.25	4,719	827	0262G1300827	29.899	81.988	Ghaghara	E(c)	3.47	4,393
755	0262G0600755	29.694	81.483	Ghaghara	E(o)	0.55	4,468	828	0262J0300828	30.354	82.088	Ghaghara	M(o)	5.05	5,345
756	0262G0900756	29.964	81.704	Ghaghara	O	0.68	4,368	829	0262J0300829	30.350	82.088	Ghaghara	M(o)	8.06	5,317
757	0262G0900757	29.951	81.610	Ghaghara	E(o)	0.61	4,797	830	0262J0300830	30.349	82.091	Ghaghara	M(o)	0.41	5,325

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
831	0262J0300831	30.346	82.084	Ghaghara	M(o)	5.24	5,380	904	0262K0100904	29.994	82.045	Ghaghara	M(o)	2.57	4,724
832	0262J0300832	30.346	82.087	Ghaghara	M(o)	0.66	5,392	905	0262K0100905	29.993	82.197	Ghaghara	M(l)	24.67	4,379
833	0262J0300833	30.345	82.093	Ghaghara	M(o)	0.44	5,261	906	0262K0100906	29.991	82.056	Ghaghara	E(o)	0.43	4,863
834	0262J0300834	30.334	82.073	Ghaghara	M(o)	0.33	5,390	907	0262K0100907	29.977	82.209	Ghaghara	M(o)	1.54	4,937
835	0262J0300835	30.316	82.017	Ghaghara	M(o)	0.84	5,341	908	0262K0100908	29.972	82.059	Ghaghara	M(o)	0.35	4,781
836	0262J0300836	30.315	82.012	Ghaghara	M(o)	3.66	5,345	909	0262K0100909	29.971	82.250	Ghaghara	E(c)	17.27	4,881
837	0262J0300837	30.312	82.041	Ghaghara	E(o)	0.47	5,399	910	0262K0100910	29.968	82.216	Ghaghara	E(o)	0.55	4,867
838	0262J0300838	30.311	82.040	Ghaghara	E(o)	0.44	5,395	911	0262K0100911	29.961	82.084	Ghaghara	M(o)	2.52	4,750
839	0262J0300839	30.303	82.047	Ghaghara	E(o)	0.77	5,465	912	0262K0100912	29.935	82.208	Ghaghara	E(c)	12.01	4,562
840	0262J0300840	30.301	82.105	Ghaghara	M(o)	0.33	5,337	913	0262K0100913	29.931	82.159	Ghaghara	M(o)	0.79	4,966
841	0262J0300841	30.290	82.051	Ghaghara	M(o)	0.41	5,206	914	0262K0100914	29.931	82.219	Ghaghara	M(o)	0.42	5,053
842	0262J0300842	30.289	82.047	Ghaghara	M(o)	1.64	5,267	915	0262K0100915	29.929	82.166	Ghaghara	M(o)	0.88	4,729
843	0262J0300843	30.286	82.047	Ghaghara	M(o)	1.08	5,289	916	0262K0100916	29.929	82.207	Ghaghara	E(c)	32.97	4,550
844	0262J0300844	30.277	82.039	Ghaghara	E(o)	0.64	5,234	917	0262K0100917	29.928	82.235	Ghaghara	O	12.27	4,236
845	0262J0300845	30.264	82.097	Ghaghara	M(o)	0.25	5,330	918	0262K0100918	29.923	82.202	Ghaghara	M(o)	0.32	4,544
846	0262J0300846	30.263	82.099	Ghaghara	M(o)	3.74	5,328	919	0262K0100919	29.915	82.215	Ghaghara	E(o)	1.44	4,840
847	0262J0300847	30.262	82.002	Ghaghara	E(o)	2.72	5,237	920	0262K0100920	29.912	82.215	Ghaghara	M(o)	5.79	4,842
848	0262J0400848	30.244	82.091	Ghaghara	M(o)	0.53	5,300	921	0262K0100921	29.905	82.230	Ghaghara	M(lg)	0.78	4,971
849	0262J0400849	30.239	82.001	Ghaghara	E(o)	0.48	5,084	922	0262K0100922	29.902	82.006	Ghaghara	O	1.93	4,293
850	0262J0400850	30.218	82.105	Ghaghara	M(o)	0.77	5,464	923	0262K0100923	29.899	82.006	Ghaghara	E(o)	0.60	4,305
851	0262J0400851	30.216	82.091	Ghaghara	M(o)	0.26	5,289	924	0262K0100924	29.898	82.007	Ghaghara	E(o)	0.48	4,322
852	0262J0400852	30.215	82.086	Ghaghara	M(o)	2.91	5,164	925	0262K0100925	29.897	82.249	Ghaghara	E(c)	5.71	4,464
853	0262J0400853	30.215	82.110	Ghaghara	M(o)	2.99	5,396	926	0262K0100926	29.896	82.009	Ghaghara	E(o)	3.28	4,314
854	0262J0400854	30.213	82.095	Ghaghara	M(o)	1.08	5,327	927	0262K0100927	29.894	82.032	Ghaghara	E(o)	0.63	4,659
855	0262J0400855	30.203	82.105	Ghaghara	M(o)	3.90	5,359	928	0262K0100928	29.891	82.034	Ghaghara	E(o)	1.33	4,546
856	0262J0400856	30.203	82.098	Ghaghara	M(o)	1.99	5,417	929	0262K0100929	29.889	82.044	Ghaghara	E(o)	1.62	4,465
857	0262J0400857	30.196	82.118	Ghaghara	M(e)	9.42	5,152	930	0262K0100930	29.887	82.234	Ghaghara	E(o)	7.36	4,524
858	0262J0400858	30.196	82.115	Ghaghara	I(s)	0.26	5,188	931	0262K0100931	29.885	82.046	Ghaghara	E(o)	3.88	4,416
859	0262J0400859	30.195	82.102	Ghaghara	M(o)	1.49	5,314	932	0262K0100932	29.885	82.049	Ghaghara	E(o)	3.20	4,408
860	0262J0400860	30.186	82.095	Ghaghara	M(o)	2.34	4,850	933	0262K0100933	29.884	82.034	Ghaghara	E(o)	1.02	4,530
861	0262J0400861	30.171	82.062	Ghaghara	E(o)	2.43	5,155	934	0262K0100934	29.884	82.064	Ghaghara	E(o)	0.83	4,448
862	0262J0400862	30.167	82.063	Ghaghara	E(o)	1.41	5,109	935	0262K0100935	29.884	82.027	Ghaghara	E(o)	0.39	4,674
863	0262J0400863	30.165	82.170	Ghaghara	M(l)	7.51	5,196	936	0262K0100936	29.882	82.037	Ghaghara	E(o)	8.29	4,521
864	0262J0400864	30.162	82.100	Ghaghara	E(o)	0.60	5,198	937	0262K0100937	29.881	82.062	Ghaghara	E(o)	0.41	4,488
865	0262J0400865	30.149	82.161	Ghaghara	M(l)	16.65	4,994	938	0262K0100938	29.879	82.061	Ghaghara	E(o)	1.48	4,493
866	0262J0400866	30.144	82.175	Ghaghara	I(s)	0.26	5,080	939	0262K0100939	29.879	82.058	Ghaghara	E(o)	0.35	4,523
867	0262J0400867	30.144	82.169	Ghaghara	I(s)	0.28	5,043	940	0262K0100940	29.868	82.079	Ghaghara	E(o)	0.95	4,361
868	0262J0400868	30.143	82.162	Ghaghara	I(s)	0.80	5,004	941	0262K0200941	29.743	82.228	Ghaghara	M(o)	0.76	4,637
869	0262J0400869	30.140	82.156	Ghaghara	I(s)	0.38	4,963	942	0262K0200942	29.709	82.243	Ghaghara	E(o)	0.91	4,815
870	0262J0400870	30.139	82.154	Ghaghara	I(s)	0.38	4,957	943	0262K0200943	29.707	82.173	Ghaghara	M(o)	0.44	4,348
871	0262J0400871	30.139	82.153	Ghaghara	I(s)	0.25	4,942	944	0262K0200944	29.706	82.229	Ghaghara	M(o)	0.55	5,003
872	0262J0400872	30.138	82.140	Ghaghara	I(s)	0.25	4,867	945	0262K0200945	29.702	82.245	Ghaghara	M(o)	10.53	4,671
873	0262J0400873	30.138	82.116	Ghaghara	M(o)	0.46	4,906	946	0262K0200946	29.693	82.240	Ghaghara	M(o)	2.82	4,690
874	0262J0400874	30.135	82.134	Ghaghara	I(s)	0.25	4,917	947	0262K0200947	29.692	82.177	Ghaghara	E(o)	7.45	4,383
875	0262J0400875	30.106	82.151	Ghaghara	M(l)	0.26	5,159	948	0262K0200948	29.691	82.172	Ghaghara	E(o)	1.06	4,327
876	0262J0400876	30.090	82.121	Ghaghara	M(o)	0.28	5,176	949	0262K0200949	29.687	82.177	Ghaghara	E(o)	4.16	4,491
877	0262J0400877	30.089	82.123	Ghaghara	M(o)	1.52	5,187	950	0262K0200950	29.683	82.197	Ghaghara	E(o)	1.18	4,647
878	0262J0400878	30.079	82.119	Ghaghara	M(e)	1.38	4,913	951	0262K0200951	29.680	82.245	Ghaghara	I(s)	0.32	5,066
879	0262J0400879	30.074	82.136	Ghaghara	M(o)	0.34	5,134	952	0262K0200952	29.679	82.206	Ghaghara	E(o)	9.09	4,608
880	0262J0400880	30.067	82.127	Ghaghara	M(l)	62.33	4,829	953	0262K0200953	29.675	82.193	Ghaghara	M(o)	15.17	4,223
881	0262J0400881	30.065	82.120	Ghaghara	M(o)	0.27	5,073	954	0262K0200954	29.675	82.222	Ghaghara	M(o)	0.26	4,749
882	0262J0400882	30.060	82.250	Ghaghara	I(s)	0.35	4,968	955	0262K0200955	29.673	82.190	Ghaghara	E(o)	3.31	4,233
883	0262J0400883	30.059	82.132	Ghaghara	M(e)	0.84	4,802	956	0262K0200956	29.670	82.229	Ghaghara	E(o)	5.62	4,757
884	0262J0400884	30.057	82.136	Ghaghara	M(o)	0.25	4,817	957	0262K0200957	29.669	82.222	Ghaghara	E(o)	11.34	4,577
885	0262J0400885	30.057	82.143	Ghaghara	M(o)	3.30	4,846	958	0262K0200958	29.668	82.194	Ghaghara	E(o)	12.67	4,379
886	0262J0400886	30.054	82.239	Ghaghara	E(o)	0.25	5,240	959	0262K0200959	29.666	82.203	Ghaghara	E(c)	19.44	4,388
887	0262J0400887	30.046	82.167	Ghaghara	M(o)	2.60	5,067	960	0262K0200960	29.665	82.244	Ghaghara	E(o)	2.64	4,720
888	0262J0400888	30.040	82.162	Ghaghara	M(o)	0.38	4,902	961	0262K0200961	29.665	82.240	Ghaghara	E(o)	1.20	4,779
889	0262J0400889	30.039	82.099	Ghaghara	E(o)	0.64	5,156	962	0262K0200962	29.665	82.248	Ghaghara	E(o)	2.04	4,703
890	0262J0400890	30.036	82.218	Ghaghara	M(o)	0.71	5,026	963	0262K0200963	29.664	82.215	Ghaghara	E(o)	3.58	4,629
891	0262J0400891	30.034	82.167	Ghaghara	M(o)	1.30	5,074	964	0262K0200964	29.663	82.195	Ghaghara	M(o)	4.59	4,377
892	0262J0400892	30.033	82.088	Ghaghara	M(o)	0.82	5,085	965	0262K0200965	29.662	82.190	Ghaghara	E(o)	0.41	4,425
893	0262J0400893	30.032	82.127	Ghaghara	M(o)	1.59	5,043	966	0262K0200966	29.661	82.192	Ghaghara	E(o)	0.53	4,429
894	0262J0400894	30.023	82.164	Ghaghara	M(o)	2.78	5,001	967	0262K0200967	29.660	82.216	Ghaghara	E(o)	1.63	4,665
895	0262J0400895	30.023	82.122	Ghaghara	M(o)	1.30	5,023	968	0262K0200968	29.660	82.207	Ghaghara	E(o)	1.55	4,593
896	0262J0400896	30.021	82.170	Ghaghara	M(o)	0.58	5,024	969	0262K0200969	29.660	82.222	Ghaghara	E(o)	2.92	4,622
897	0262J0400897	30.002	82.037	Ghaghara	M(o)	0.68	5,013	970	0262K0200970	29.658	82.239	Ghaghara	E(o)	0.74	4,689
898	0262J0800898	30.038	82.268	Ghaghara	M(l)	0.42	4,732	971	0262K0200971	29.655	82.245	Ghaghara	E(o)	0.57	4,530
899	0262J0800899	30.032	82.284	Ghaghara	M(o)	1.59	5,036	972	0262K0200972	29.654	82.223	Ghaghara	E(o)	13.57	4,492
900	0262J0800900	30.031	82.275	Ghaghara	E(o)	0.31	4,824	973	0262K0200973	29.651	82.207	Ghaghara	E(o)	0.50	4,424
901	0262J0800901	30.024	82.270	Ghaghara	E(o)	2.79	4,662	974	0262K0200974	29.651	82.221	Ghaghara	E(l)	0.90	4,486
902	0262J0800902	30.010	82.300	Ghaghara	E(c)	8.96	5,099	975	0262K0200975	29.651	82.212	Ghaghara	E(o)	1.85	4,530
903	0262J0800903	30.003	82.300	Ghaghara	E(o)	2.91	4,921	976	0262K0200976	29.648	82.202	Ghaghara	E(o)	2.94	4,266

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
977	0262K0200977	29.647	82.226	Ghaghara	E(o)	3.53	4,351	1050	0262K0501050	29.816	82.450	Ghaghara	E(o)	0.27	5,196
978	0262K0400978	29.147	82.160	Ghaghara	E(o)	0.66	3,907	1051	0262K0501051	29.815	82.448	Ghaghara	M(o)	1.17	5,192
979	0262K0400979	29.121	82.222	Ghaghara	E(o)	0.32	4,341	1052	0262K0501052	29.811	82.440	Ghaghara	M(o)	0.27	5,279
980	0262K0400980	29.119	82.233	Ghaghara	E(o)	0.56	4,235	1053	0262K0501053	29.808	82.447	Ghaghara	M(o)	1.51	5,222
981	0262K0400981	29.116	82.227	Ghaghara	E(o)	0.81	4,277	1054	0262K0501054	29.806	82.432	Ghaghara	M(o)	0.56	5,061
982	0262K0400982	29.116	82.236	Ghaghara	E(o)	10.84	4,270	1055	0262K0501055	29.802	82.414	Ghaghara	M(o)	0.35	5,156
983	0262K0400983	29.112	82.230	Ghaghara	E(o)	5.20	4,369	1056	0262K0501056	29.801	82.450	Ghaghara	M(o)	0.92	5,205
984	0262K0400984	29.111	82.246	Ghaghara	E(o)	2.97	4,398	1057	0262K0501057	29.801	82.269	Ghaghara	E(o)	5.15	4,882
985	0262K0400985	29.110	82.219	Ghaghara	E(o)	2.37	4,350	1058	0262K0501058	29.798	82.416	Ghaghara	M(o)	2.99	5,107
986	0262K0400986	29.110	82.227	Ghaghara	E(o)	0.81	4,390	1059	0262K0501059	29.798	82.450	Ghaghara	M(o)	0.25	5,189
987	0262K0400987	29.106	82.237	Ghaghara	E(o)	8.79	4,512	1060	0262K0501060	29.793	82.365	Ghaghara	M(o)	1.14	5,065
988	0262K0400988	29.103	82.199	Ghaghara	E(o)	1.57	4,353	1061	0262K0501061	29.792	82.438	Ghaghara	E(o)	0.31	4,862
989	0262K0400989	29.103	82.227	Ghaghara	E(o)	0.26	4,487	1062	0262K0501062	29.790	82.460	Ghaghara	M(o)	1.95	5,224
990	0262K0400990	29.101	82.228	Ghaghara	E(o)	0.41	4,452	1063	0262K0501063	29.789	82.436	Ghaghara	E(o)	0.56	4,854
991	0262K0400991	29.099	82.250	Ghaghara	E(o)	0.59	4,388	1064	0262K0501064	29.787	82.369	Ghaghara	M(o)	0.57	4,886
992	0262K0400992	29.097	82.202	Ghaghara	E(o)	3.55	4,332	1065	0262K0501065	29.784	82.393	Ghaghara	M(o)	0.56	5,175
993	0262K0400993	29.084	82.181	Ghaghara	E(o)	0.44	4,339	1066	0262K0501066	29.778	82.390	Ghaghara	M(o)	0.96	4,895
994	0262K0400994	29.084	82.186	Ghaghara	E(o)	11.01	4,242	1067	0262K0501067	29.776	82.449	Ghaghara	E(o)	7.82	4,949
995	0262K0400995	29.069	82.182	Ghaghara	E(o)	1.05	4,358	1068	0262K0501068	29.774	82.452	Ghaghara	E(o)	2.40	4,948
996	0262K0500996	29.998	82.278	Ghaghara	M(o)	1.18	4,999	1069	0262K0501069	29.769	82.356	Ghaghara	M(o)	0.27	4,922
997	0262K0500997	29.991	82.316	Ghaghara	M(o)	1.09	5,065	1070	0262K0501070	29.763	82.472	Ghaghara	M(o)	1.62	4,763
998	0262K0500998	29.979	82.395	Ghaghara	E(o)	3.55	5,218	1071	0262K0501071	29.761	82.405	Ghaghara	M(o)	0.70	5,048
999	0262K0500999	29.976	82.392	Ghaghara	M(o)	0.84	5,157	1072	0262K0501072	29.757	82.453	Ghaghara	E(o)	0.46	4,480
1000	0262K0501000	29.968	82.434	Ghaghara	E(o)	0.62	4,895	1073	0262K0501073	29.754	82.415	Ghaghara	E(c)	42.40	4,692
1001	0262K0501001	29.956	82.400	Ghaghara	M(o)	0.33	5,304	1074	0262K0501074	29.754	82.437	Ghaghara	E(o)	3.26	4,165
1002	0262K0501002	29.955	82.321	Ghaghara	E(o)	0.89	4,772	1075	0262K0501075	29.752	82.410	Ghaghara	E(o)	0.29	4,697
1003	0262K0501003	29.950	82.461	Ghaghara	M(o)	0.60	5,123	1076	0262K0601076	29.740	82.369	Ghaghara	M(e)	0.34	4,857
1004	0262K0501004	29.948	82.301	Ghaghara	M(o)	0.65	4,885	1077	0262K0601077	29.740	82.468	Ghaghara	E(o)	5.93	4,976
1005	0262K0501005	29.933	82.484	Ghaghara	M(o)	1.06	4,858	1078	0262K0601078	29.733	82.465	Ghaghara	E(o)	0.42	4,670
1006	0262K0501006	29.928	82.259	Ghaghara	M(o)	1.10	4,887	1079	0262K0601079	29.733	82.458	Ghaghara	E(o)	5.01	4,578
1007	0262K0501007	29.924	82.443	Ghaghara	E(o)	0.57	4,486	1080	0262K0601080	29.729	82.353	Ghaghara	E(o)	1.95	4,613
1008	0262K0501008	29.922	82.445	Ghaghara	E(o)	6.56	4,483	1081	0262K0601081	29.727	82.470	Ghaghara	E(o)	3.81	4,792
1009	0262K0501009	29.898	82.474	Ghaghara	E(o)	3.34	4,907	1082	0262K0601082	29.722	82.465	Ghaghara	E(o)	2.13	4,674
1010	0262K0501010	29.893	82.463	Ghaghara	M(o)	0.47	4,968	1083	0262K0601083	29.718	82.364	Ghaghara	E(o)	6.83	4,505
1011	0262K0501011	29.893	82.436	Ghaghara	M(o)	0.87	5,031	1084	0262K0601084	29.715	82.366	Ghaghara	M(o)	0.35	4,751
1012	0262K0501012	29.892	82.336	Ghaghara	E(o)	1.66	4,543	1085	0262K0601085	29.714	82.250	Ghaghara	M(l)	11.54	4,651
1013	0262K0501013	29.880	82.389	Ghaghara	M(o)	0.93	5,010	1086	0262K0601086	29.714	82.365	Ghaghara	M(o)	0.74	4,799
1014	0262K0501014	29.880	82.447	Ghaghara	E(o)	0.36	5,246	1087	0262K0601087	29.705	82.343	Ghaghara	E(o)	4.77	4,563
1015	0262K0501015	29.878	82.383	Ghaghara	M(o)	12.59	4,967	1088	0262K0601088	29.704	82.339	Ghaghara	E(o)	6.99	4,560
1016	0262K0501016	29.876	82.389	Ghaghara	M(o)	0.59	5,032	1089	0262K0601089	29.703	82.355	Ghaghara	E(o)	0.58	4,860
1017	0262K0501017	29.875	82.451	Ghaghara	E(o)	0.65	5,275	1090	0262K0601090	29.703	82.336	Ghaghara	E(o)	4.38	4,567
1018	0262K0501018	29.867	82.441	Ghaghara	M(o)	0.39	5,124	1091	0262K0601091	29.703	82.478	Ghaghara	E(o)	1.46	4,778
1019	0262K0501019	29.865	82.423	Ghaghara	M(o)	0.37	5,319	1092	0262K0601092	29.702	82.332	Ghaghara	E(o)	1.37	4,551
1020	0262K0501020	29.865	82.411	Ghaghara	M(o)	0.85	5,113	1093	0262K0601093	29.700	82.327	Ghaghara	E(c)	9.09	4,399
1021	0262K0501021	29.864	82.384	Ghaghara	M(o)	0.56	5,086	1094	0262K0601094	29.698	82.373	Ghaghara	M(o)	13.27	4,842
1022	0262K0501022	29.862	82.383	Ghaghara	M(o)	3.25	5,111	1095	0262K0601095	29.693	82.376	Ghaghara	E(o)	2.23	4,780
1023	0262K0501023	29.862	82.337	Ghaghara	M(o)	0.42	5,179	1096	0262K0601096	29.687	82.419	Ghaghara	M(o)	2.41	4,636
1024	0262K0501024	29.862	82.385	Ghaghara	M(o)	0.26	5,094	1097	0262K0601097	29.674	82.409	Ghaghara	M(o)	3.56	4,953
1025	0262K0501025	29.861	82.439	Ghaghara	M(o)	0.92	5,242	1098	0262K0601098	29.669	82.417	Ghaghara	E(o)	2.09	4,795
1026	0262K0501026	29.860	82.486	Ghaghara	E(o)	0.26	4,915	1099	0262K0601099	29.667	82.408	Ghaghara	E(o)	3.57	4,801
1027	0262K0501027	29.859	82.333	Ghaghara	E(c)	8.76	5,057	1100	0262K0601100	29.667	82.265	Ghaghara	O	0.37	4,331
1028	0262K0501028	29.859	82.483	Ghaghara	E(o)	1.40	4,904	1101	0262K0601101	29.665	82.416	Ghaghara	E(c)	3.71	4,638
1029	0262K0501029	29.855	82.483	Ghaghara	M(o)	0.35	4,970	1102	0262K0601102	29.662	82.259	Ghaghara	E(o)	7.18	4,499
1030	0262K0501030	29.854	82.339	Ghaghara	M(o)	4.97	4,965	1103	0262K0601103	29.662	82.411	Ghaghara	E(o)	1.85	4,789
1031	0262K0501031	29.853	82.377	Ghaghara	E(o)	2.21	5,014	1104	0262K0601104	29.662	82.354	Ghaghara	E(o)	1.74	4,408
1032	0262K0501032	29.850	82.355	Ghaghara	E(c)	4.46	5,028	1105	0262K0601105	29.661	82.275	Ghaghara	E(o)	0.70	4,579
1033	0262K0501033	29.848	82.447	Ghaghara	M(o)	0.51	5,076	1106	0262K0601106	29.659	82.277	Ghaghara	E(o)	1.36	4,582
1034	0262K0501034	29.847	82.475	Ghaghara	E(o)	0.46	5,031	1107	0262K0601107	29.658	82.443	Ghaghara	E(o)	0.60	4,659
1035	0262K0501035	29.846	82.449	Ghaghara	E(o)	0.59	5,056	1108	0262K0601108	29.656	82.368	Ghaghara	E(o)	0.83	4,354
1036	0262K0501036	29.846	82.464	Ghaghara	E(o)	1.21	4,959	1109	0262K0601109	29.655	82.354	Ghaghara	E(o)	1.23	4,395
1037	0262K0501037	29.843	82.481	Ghaghara	E(o)	0.82	5,008	1110	0262K0601110	29.654	82.257	Ghaghara	E(o)	7.42	4,478
1038	0262K0501038	29.843	82.439	Ghaghara	M(o)	0.70	5,056	1111	0262K0601111	29.653	82.366	Ghaghara	E(o)	5.04	4,366
1039	0262K0501039	29.843	82.476	Ghaghara	E(o)	5.95	4,936	1112	0262K0601112	29.653	82.286	Ghaghara	E(o)	1.50	4,236
1040	0262K0501040	29.842	82.472	Ghaghara	E(o)	3.50	4,892	1113	0262K0601113	29.650	82.262	Ghaghara	E(o)	2.13	4,375
1041	0262K0501041	29.841	82.352	Ghaghara	M(o)	0.38	5,041	1114	0262K0601114	29.650	82.284	Ghaghara	E(o)	1.43	4,317
1042	0262K0501042	29.840	82.350	Ghaghara	M(o)	1.04	5,038	1115	0262K0601115	29.649	82.368	Ghaghara	E(o)	3.13	4,469
1043	0262K0501043	29.839	82.355	Ghaghara	E(o)	1.73	4,977	1116	0262K0601116	29.648	82.399	Ghaghara	E(o)	1.09	4,580
1044	0262K0501044	29.838	82.475	Ghaghara	E(o)	1.98	4,909	1117	0262K0601117	29.647	82.258	Ghaghara	E(o)	4.49	4,213
1045	0262K0501045	29.837	82.349	Ghaghara	E(o)	2.07	4,996	1118	0262K0601118	29.637	82.356	Ghaghara	E(o)	1.50	4,273
1046	0262K0501046	29.828	82.466	Ghaghara	E(o)	2.26	4,511	1119	0262K0601119	29.628	82.357	Ghaghara	E(o)	0.26	4,494
1047	0262K0501047	29.825	82.433	Ghaghara	M(o)	0.51	5,168	1120	0262K0601120	29.524	82.445	Ghaghara	E(o)	0.68	4,597
1048	0262K0501048	29.819	82.453	Ghaghara	M(o)	0.88	5,110	1121	0262K0601121	29.518	82.310	Ghaghara	M(o)	0.84	4,478
1049	0262K0501049	29.816	82.377	Ghaghara	M(e)	0.94	4,958	1122	0262K0601122	29.514	82.308	Ghaghara	E(o)	3.35	4,409

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
1123	0262K0601123	29.513	82.312	Ghaghara	E(o)	2.07	4,482	1196	0262K0801196	29.094	82.263	Ghaghara	E(o)	0.42	4,474
1124	0262K0601124	29.505	82.328	Ghaghara	E(o)	3.14	4,727	1197	0262K0801197	29.085	82.272	Ghaghara	E(o)	2.51	4,428
1125	0262K0601125	29.505	82.455	Ghaghara	M(o)	0.34	5,195	1198	0262K0801198	29.084	82.262	Ghaghara	E(o)	2.13	4,333
1126	0262K0601126	29.500	82.304	Ghaghara	E(o)	2.27	4,512	1199	0262K0801199	29.068	82.265	Ghaghara	E(o)	0.52	4,181
1127	0262K0701127	29.500	82.314	Ghaghara	E(o)	0.28	4,533	1200	0262K0801200	29.062	82.263	Ghaghara	E(o)	0.44	4,116
1128	0262K0701128	29.498	82.313	Ghaghara	E(o)	1.91	4,539	1201	0262K0901201	29.965	82.531	Ghaghara	E(o)	0.33	4,905
1129	0262K0701129	29.497	82.308	Ghaghara	E(o)	0.42	4,598	1202	0262K0901202	29.964	82.533	Ghaghara	E(o)	2.56	4,910
1130	0262K0701130	29.496	82.316	Ghaghara	E(o)	0.31	4,476	1203	0262K0901203	29.959	82.529	Ghaghara	E(o)	0.48	4,932
1131	0262K0701131	29.495	82.338	Ghaghara	E(o)	1.11	4,516	1204	0262K0901204	29.955	82.545	Ghaghara	E(o)	1.42	5,066
1132	0262K0701132	29.491	82.380	Ghaghara	E(o)	1.59	4,679	1205	0262K0901205	29.955	82.539	Ghaghara	E(o)	0.30	4,984
1133	0262K0701133	29.491	82.390	Ghaghara	E(o)	6.01	4,764	1206	0262K0901206	29.954	82.534	Ghaghara	E(o)	0.43	4,841
1134	0262K0701134	29.489	82.337	Ghaghara	E(o)	1.69	4,316	1207	0262K0901207	29.953	82.535	Ghaghara	E(o)	0.32	4,837
1135	0262K0701135	29.486	82.491	Ghaghara	E(o)	4.14	4,980	1208	0262K0901208	29.952	82.556	Ghaghara	M(o)	0.92	5,180
1136	0262K0701136	29.486	82.350	Ghaghara	E(o)	8.39	4,732	1209	0262K0901209	29.952	82.554	Ghaghara	E(o)	0.49	5,182
1137	0262K0701137	29.485	82.353	Ghaghara	E(o)	0.25	4,715	1210	0262K0901210	29.949	82.534	Ghaghara	E(o)	1.31	4,826
1138	0262K0701138	29.482	82.463	Ghaghara	M(o)	0.37	4,701	1211	0262K0901211	29.947	82.559	Ghaghara	M(o)	0.57	5,316
1139	0262K0701139	29.476	82.374	Ghaghara	E(o)	6.07	4,441	1212	0262K0901212	29.946	82.550	Ghaghara	E(o)	0.72	5,036
1140	0262K0701140	29.475	82.350	Ghaghara	E(o)	1.06	4,374	1213	0262K0901213	29.945	82.550	Ghaghara	E(o)	0.67	5,020
1141	0262K0701141	29.475	82.386	Ghaghara	O	0.80	4,267	1214	0262K0901214	29.945	82.536	Ghaghara	E(o)	0.85	4,787
1142	0262K0701142	29.471	82.439	Ghaghara	M(o)	0.27	5,085	1215	0262K0901215	29.944	82.548	Ghaghara	E(o)	0.87	5,013
1143	0262K0701143	29.470	82.308	Ghaghara	E(o)	2.47	4,377	1216	0262K0901216	29.938	82.534	Ghaghara	E(o)	0.46	4,646
1144	0262K0701144	29.469	82.311	Ghaghara	E(o)	1.21	4,362	1217	0262K0901217	29.905	82.518	Ghaghara	E(o)	8.93	4,812
1145	0262K0701145	29.467	82.398	Ghaghara	E(o)	5.37	4,421	1218	0262K0901218	29.903	82.530	Ghaghara	M(o)	0.79	5,042
1146	0262K0701146	29.463	82.380	Ghaghara	O	8.93	3,978	1219	0262K0901219	29.902	82.570	Ghaghara	E(o)	0.48	4,831
1147	0262K0701147	29.459	82.458	Ghaghara	M(o)	0.26	5,093	1220	0262K0901220	29.894	82.568	Ghaghara	E(o)	0.37	4,674
1148	0262K0701148	29.459	82.394	Ghaghara	M(o)	7.42	4,466	1221	0262K0901221	29.893	82.537	Ghaghara	E(o)	1.21	4,842
1149	0262K0701149	29.457	82.308	Ghaghara	E(o)	0.25	4,340	1222	0262K0901222	29.893	82.514	Ghaghara	E(o)	11.14	5,031
1150	0262K0701150	29.453	82.303	Ghaghara	E(o)	5.25	4,420	1223	0262K0901223	29.892	82.533	Ghaghara	E(o)	0.64	4,956
1151	0262K0701151	29.452	82.305	Ghaghara	E(o)	0.67	4,414	1224	0262K0901224	29.889	82.507	Ghaghara	E(o)	4.23	4,832
1152	0262K0701152	29.450	82.277	Ghaghara	E(o)	0.43	4,248	1225	0262K0901225	29.885	82.588	Ghaghara	M(o)	0.50	5,167
1153	0262K0701153	29.449	82.274	Ghaghara	E(o)	0.85	4,294	1226	0262K0901226	29.884	82.527	Ghaghara	E(o)	0.28	4,896
1154	0262K0701154	29.448	82.271	Ghaghara	E(o)	0.34	4,328	1227	0262K0901227	29.883	82.608	Ghaghara	E(o)	0.28	5,406
1155	0262K0701155	29.437	82.387	Ghaghara	M(o)	1.16	4,817	1228	0262K0901228	29.879	82.523	Ghaghara	E(o)	0.94	4,932
1156	0262K0701156	29.436	82.272	Ghaghara	E(o)	0.64	4,259	1229	0262K0901229	29.878	82.574	Ghaghara	M(o)	0.47	5,030
1157	0262K0701157	29.432	82.402	Ghaghara	E(o)	3.70	4,529	1230	0262K0901230	29.877	82.518	Ghaghara	E(o)	0.51	4,831
1158	0262K0701158	29.432	82.361	Ghaghara	E(o)	27.07	4,398	1231	0262K0901231	29.876	82.521	Ghaghara	E(o)	0.27	4,819
1159	0262K0701159	29.428	82.400	Ghaghara	E(o)	1.96	4,572	1232	0262K0901232	29.875	82.597	Ghaghara	E(o)	2.88	5,190
1160	0262K0701160	29.427	82.360	Ghaghara	E(o)	0.37	4,468	1233	0262K0901233	29.871	82.596	Ghaghara	E(o)	0.69	5,148
1161	0262K0701161	29.421	82.457	Ghaghara	E(o)	0.97	4,677	1234	0262K0901234	29.861	82.574	Ghaghara	E(o)	0.56	5,318
1162	0262K0701162	29.417	82.456	Ghaghara	E(o)	2.15	4,612	1235	0262K0901235	29.859	82.586	Ghaghara	E(o)	0.93	5,117
1163	0262K0701163	29.414	82.414	Ghaghara	E(o)	0.29	4,034	1236	0262K0901236	29.856	82.563	Ghaghara	E(o)	6.28	4,863
1164	0262K0701164	29.408	82.398	Ghaghara	O	0.82	3,979	1237	0262K0901237	29.853	82.604	Ghaghara	I(s)	0.49	4,821
1165	0262K0701165	29.408	82.430	Ghaghara	E(c)	19.81	4,415	1238	0262K0901238	29.853	82.577	Ghaghara	E(o)	0.49	5,347
1166	0262K0701166	29.405	82.441	Ghaghara	E(o)	1.07	4,763	1239	0262K0901239	29.850	82.594	Ghaghara	E(o)	0.36	4,960
1167	0262K0701167	29.391	82.394	Ghaghara	E(o)	16.79	3,954	1240	0262K0901240	29.849	82.575	Ghaghara	E(o)	2.60	5,230
1168	0262K0701168	29.389	82.383	Ghaghara	E(o)	0.59	4,303	1241	0262K0901241	29.848	82.580	Ghaghara	E(o)	0.53	5,142
1169	0262K0701169	29.387	82.416	Ghaghara	E(o)	13.31	4,447	1242	0262K0901242	29.832	82.697	Ghaghara	M(o)	1.10	5,283
1170	0262K0701170	29.386	82.466	Ghaghara	E(o)	3.77	4,610	1243	0262K0901243	29.831	82.705	Ghaghara	M(o)	0.48	5,197
1171	0262K0701171	29.386	82.472	Ghaghara	E(o)	0.53	4,473	1244	0262K0901244	29.829	82.672	Ghaghara	M(o)	0.84	5,243
1172	0262K0701172	29.384	82.424	Ghaghara	E(c)	46.79	4,434	1245	0262K0901245	29.828	82.674	Ghaghara	M(o)	0.57	5,143
1173	0262K0701173	29.382	82.410	Ghaghara	E(o)	10.19	4,287	1246	0262K0901246	29.822	82.676	Ghaghara	E(o)	2.68	5,103
1174	0262K0701174	29.382	82.397	Ghaghara	M(o)	4.75	4,372	1247	0262K0901247	29.822	82.712	Ghaghara	M(o)	19.68	5,037
1175	0262K0701175	29.379	82.385	Ghaghara	E(o)	1.53	4,396	1248	0262K0901248	29.812	82.702	Ghaghara	M(o)	0.58	5,100
1176	0262K0701176	29.373	82.473	Ghaghara	E(o)	0.74	4,556	1249	0262K0901249	29.812	82.701	Ghaghara	M(o)	1.05	5,058
1177	0262K0701177	29.372	82.473	Ghaghara	E(o)	0.30	4,564	1250	0262K0901250	29.809	82.664	Ghaghara	M(o)	4.11	4,766
1178	0262K0701178	29.372	82.393	Ghaghara	E(o)	0.51	4,248	1251	0262K0901251	29.807	82.664	Ghaghara	M(o)	0.44	4,738
1179	0262K0701179	29.319	82.482	Ghaghara	E(o)	1.83	4,546	1252	0262K0901252	29.807	82.634	Ghaghara	M(o)	0.67	5,081
1180	0262K0701180	29.310	82.495	Ghaghara	E(o)	0.40	4,592	1253	0262K0901253	29.806	82.594	Ghaghara	E(o)	0.45	5,046
1181	0262K0701181	29.309	82.474	Ghaghara	E(o)	15.73	4,081	1254	0262K0901254	29.803	82.674	Ghaghara	M(o)	2.66	4,702
1182	0262K0701182	29.288	82.491	Ghaghara	E(o)	0.45	4,733	1255	0262K0901255	29.800	82.677	Ghaghara	M(o)	0.28	4,743
1183	0262K0801183	29.208	82.482	Ghaghara	E(c)	5.12	4,264	1256	0262K0901256	29.800	82.602	Ghaghara	E(o)	0.92	4,943
1184	0262K0801184	29.128	82.270	Ghaghara	O	0.85	4,465	1257	0262K0901257	29.800	82.677	Ghaghara	M(o)	0.46	4,740
1185	0262K0801185	29.125	82.299	Ghaghara	E(o)	1.19	4,246	1258	0262K0901258	29.798	82.671	Ghaghara	M(e)	13.70	4,654
1186	0262K0801186	29.121	82.298	Ghaghara	E(o)	1.22	4,303	1259	0262K0901259	29.771	82.640	Ghaghara	E(o)	1.93	4,827
1187	0262K0801187	29.119	82.256	Ghaghara	E(o)	13.37	4,430	1260	0262K0901260	29.767	82.630	Ghaghara	M(o)	0.66	4,774
1188	0262K0801188	29.115	82.332	Ghaghara	E(o)	0.47	4,138	1261	0262K0901261	29.766	82.630	Ghaghara	M(o)	1.90	4,787
1189	0262K0801189	29.111	82.259	Ghaghara	E(o)	9.93	4,478	1262	0262K0901262	29.763	82.574	Ghaghara	M(o)	0.66	4,634
1190	0262K0801190	29.109	82.326	Ghaghara	E(o)	0.87	4,191	1263	0262K0901263	29.760	82.601	Ghaghara	M(o)	0.31	4,810
1191	0262K0801191	29.108	82.329	Ghaghara	E(o)	0.89	4,161	1264	0262K0901264	29.758	82.591	Ghaghara	M(o)	0.69	4,938
1192	0262K0801192	29.107	82.268	Ghaghara	E(o)	2.25	4,399	1265	0262K0901265	29.755	82.664	Ghaghara	M(o)	1.36	5,439
1193	0262K0801193	29.102	82.250	Ghaghara	E(o)	0.97	4,407	1266	0262K0901266	29.754	82.645	Ghaghara	M(o)	0.38	5,269
1194	0262K0801194	29.097	82.272	Ghaghara	E(o)	0.40	4,532	1267	0262K0901267	29.751	82.687	Ghaghara	M(o)	1.61	5,393
1195	0262K0801195	29.094	82.255	Ghaghara	E(o)	2.51	4,411	1268	0262K0901268	29.750	82.683	Ghaghara	M(o)	1.17	5,375

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
1269	0262K1001269	29.750	82.662	Ghaghara	M(o)	0.49	5,368	1342	0262K1401342	29.689	82.939	Ghaghara	M(o)	8.30	5,503
1270	0262K1001270	29.748	82.655	Ghaghara	E(o)	0.53	5,148	1343	0262K1401343	29.688	82.918	Ghaghara	M(o)	0.74	5,299
1271	0262K1001271	29.747	82.685	Ghaghara	E(o)	0.56	5,355	1344	0262K1401344	29.683	82.925	Ghaghara	E(o)	0.61	5,349
1272	0262K1001272	29.745	82.619	Ghaghara	M(o)	1.38	5,214	1345	0262K1401345	29.681	82.810	Ghaghara	M(o)	0.96	5,022
1273	0262K1001273	29.745	82.741	Ghaghara	I(s)	0.31	5,225	1346	0262K1401346	29.680	82.889	Ghaghara	I(s)	0.27	5,288
1274	0262K1001274	29.744	82.617	Ghaghara	M(o)	0.48	5,202	1347	0262K1401347	29.680	82.900	Ghaghara	I(s)	0.26	5,238
1275	0262K1001275	29.743	82.647	Ghaghara	M(o)	7.56	5,138	1348	0262K1401348	29.678	82.818	Ghaghara	M(o)	0.39	5,372
1276	0262K1001276	29.743	82.705	Ghaghara	M(o)	11.27	5,346	1349	0262K1401349	29.677	82.839	Ghaghara	M(o)	2.54	5,121
1277	0262K1001277	29.740	82.740	Ghaghara	I(s)	0.95	5,205	1350	0262K1401350	29.673	82.822	Ghaghara	M(o)	0.83	5,286
1278	0262K1001278	29.736	82.641	Ghaghara	M(o)	0.64	5,261	1351	0262K1401351	29.673	82.900	Ghaghara	I(s)	0.43	5,199
1279	0262K1001279	29.736	82.685	Ghaghara	M(o)	1.01	5,695	1352	0262K1401352	29.672	82.841	Ghaghara	E(o)	0.59	5,019
1280	0262K1001280	29.732	82.642	Ghaghara	M(o)	0.48	5,237	1353	0262K1401353	29.665	82.944	Ghaghara	E(o)	0.60	5,542
1281	0262K1001281	29.731	82.637	Ghaghara	M(o)	6.05	5,075	1354	0262K1401354	29.663	82.872	Ghaghara	M(o)	4.57	5,040
1282	0262K1001282	29.723	82.644	Ghaghara	M(o)	18.86	4,978	1355	0262K1401355	29.650	82.994	Ghaghara	E(o)	0.31	5,322
1283	0262K1001283	29.722	82.697	Ghaghara	M(o)	0.48	5,472	1356	0262K1401356	29.646	82.954	Ghaghara	E(o)	0.90	5,095
1284	0262K1001284	29.701	82.576	Ghaghara	E(o)	3.38	4,830	1357	0262K1401357	29.638	82.789	Ghaghara	M(o)	0.83	5,196
1285	0262K1001285	29.700	82.603	Ghaghara	E(o)	2.27	4,933	1358	0262K1401358	29.635	82.802	Ghaghara	M(o)	0.70	5,466
1286	0262K1001286	29.696	82.561	Ghaghara	E(o)	11.37	4,830	1359	0262K1401359	29.632	82.787	Ghaghara	M(o)	3.89	5,123
1287	0262K1001287	29.694	82.609	Ghaghara	E(o)	2.80	4,931	1360	0262K1401360	29.631	82.800	Ghaghara	M(o)	1.17	5,195
1288	0262K1001288	29.683	82.616	Ghaghara	E(o)	2.38	4,854	1361	0262K1401361	29.624	82.763	Ghaghara	E(o)	0.27	4,954
1289	0262K1001289	29.665	82.647	Ghaghara	E(o)	1.28	5,115	1362	0262K1501362	29.397	82.770	Ghaghara	M(o)	0.35	5,154
1290	0262K1001290	29.663	82.641	Ghaghara	M(o)	0.25	5,162	1363	0262K1501363	29.355	82.813	Ghaghara	M(o)	2.92	4,799
1291	0262K1001291	29.644	82.643	Ghaghara	M(o)	0.53	5,263	1364	0262K1501364	29.345	82.864	Ghaghara	M(o)	0.26	5,284
1292	0262K1001292	29.644	82.744	Ghaghara	M(o)	0.59	4,783	1365	0262K1501365	29.345	82.909	Ghaghara	O	0.54	4,963
1293	0262K1001293	29.644	82.642	Ghaghara	M(o)	0.74	5,260	1366	0262K1501366	29.335	82.797	Ghaghara	M(e)	7.66	4,689
1294	0262K1001294	29.637	82.649	Ghaghara	E(o)	0.27	5,133	1367	0262K1501367	29.321	82.762	Ghaghara	M(o)	0.64	4,899
1295	0262K1001295	29.630	82.611	Ghaghara	M(o)	0.54	5,094	1368	0262K1501368	29.320	82.834	Ghaghara	E(o)	1.27	5,094
1296	0262K1001296	29.607	82.577	Ghaghara	M(o)	0.36	5,415	1369	0262K1501369	29.317	82.761	Ghaghara	M(l)	0.65	4,813
1297	0262K1101297	29.450	82.654	Ghaghara	E(o)	1.38	5,544	1370	0262K1501370	29.312	82.843	Ghaghara	M(e)	1.21	4,893
1298	0262K1101298	29.444	82.623	Ghaghara	I(s)	0.42	4,799	1371	0262K1501371	29.309	82.933	Ghaghara	E(o)	0.73	4,977
1299	0262K1101299	29.440	82.620	Ghaghara	I(s)	0.25	4,845	1372	0262K1501372	29.301	82.770	Ghaghara	I(s)	0.39	4,657
1300	0262K1101300	29.438	82.577	Ghaghara	I(s)	0.33	5,189	1373	0262K1501373	29.301	82.816	Ghaghara	M(o)	0.75	4,559
1301	0262K1101301	29.431	82.561	Ghaghara	I(s)	0.48	5,039	1374	0262K1501374	29.301	82.779	Ghaghara	E(o)	0.33	4,824
1302	0262K1101302	29.430	82.572	Ghaghara	I(s)	0.64	5,078	1375	0262K1501375	29.293	82.767	Ghaghara	I(s)	0.25	4,548
1303	0262K1101303	29.428	82.671	Ghaghara	E(o)	1.58	4,253	1376	0262K1501376	29.254	82.807	Ghaghara	E(o)	2.56	4,253
1304	0262K1101304	29.423	82.719	Ghaghara	M(o)	0.40	5,373	1377	0262K1601377	29.248	82.827	Ghaghara	E(o)	1.12	4,509
1305	0262K1101305	29.419	82.650	Ghaghara	E(o)	0.46	5,083	1378	0262K1601378	29.247	82.814	Ghaghara	E(o)	3.46	4,190
1306	0262K1101306	29.414	82.642	Ghaghara	M(o)	0.77	5,118	1379	0262K1601379	29.246	82.816	Ghaghara	E(o)	0.34	4,229
1307	0262K1101307	29.413	82.533	Ghaghara	E(o)	0.67	4,915	1380	0262K1601380	29.240	82.957	Ghaghara	E(o)	0.49	4,806
1308	0262K1101308	29.396	82.582	Ghaghara	M(o)	0.37	4,891	1381	0262K1601381	29.238	82.982	Ghaghara	E(o)	0.29	4,719
1309	0262K1101309	29.372	82.584	Ghaghara	M(e)	0.65	4,697	1382	0262K1601382	29.234	82.829	Ghaghara	E(o)	9.01	4,117
1310	0262K1101310	29.371	82.583	Ghaghara	M(o)	0.39	4,700	1383	0262K1601383	29.229	82.842	Ghaghara	E(o)	1.26	4,208
1311	0262K1101311	29.368	82.693	Ghaghara	I(s)	0.25	4,214	1384	0262K1601384	29.209	82.862	Ghaghara	E(o)	0.35	4,726
1312	0262K1101312	29.360	82.560	Ghaghara	E(o)	1.34	4,996	1385	0262K1601385	29.161	82.751	Ghaghara	M(o)	0.49	4,901
1313	0262K1101313	29.354	82.739	Ghaghara	M(e)	2.49	4,952	1386	0262K1601386	29.154	82.775	Ghaghara	M(o)	0.84	5,012
1314	0262K1101314	29.353	82.718	Ghaghara	M(o)	0.33	4,488	1387	0262K1601387	29.145	82.779	Ghaghara	M(o)	0.46	5,173
1315	0262K1101315	29.346	82.744	Ghaghara	I(s)	0.30	4,767	1388	0262K1601388	29.141	82.782	Ghaghara	M(o)	0.94	4,992
1316	0262K1101316	29.332	82.505	Ghaghara	E(o)	0.26	4,667	1389	0262K1601389	29.139	82.785	Ghaghara	M(o)	1.61	4,979
1317	0262K1101317	29.317	82.547	Ghaghara	I(s)	0.60	4,320	1390	0262K1601390	29.079	82.979	Ghaghara	M(o)	1.18	5,053
1318	0262K1101318	29.307	82.506	Ghaghara	M(e)	0.45	4,533	1391	0262L0101391	28.978	82.081	Ghaghara	E(o)	1.37	4,240
1319	0262K1101319	29.304	82.509	Ghaghara	I(s)	0.56	4,600	1392	0262L0101392	28.977	82.088	Ghaghara	M(o)	1.79	4,205
1320	0262K1101320	29.297	82.705	Ghaghara	M(e)	10.03	5,003	1393	0262L0901393	28.892	82.697	Ghaghara	M(o)	1.17	4,719
1321	0262K1101321	29.270	82.590	Ghaghara	M(e)	10.04	4,335	1394	0262L0901394	28.862	82.674	Ghaghara	E(o)	0.29	4,522
1322	0262K1101322	29.260	82.508	Ghaghara	E(o)	4.48	4,402	1395	0262L0901395	28.856	82.668	Ghaghara	M(o)	1.09	4,670
1323	0262K1101323	29.257	82.549	Ghaghara	M(o)	0.63	5,092	1396	0262L1301396	28.984	82.959	Ghaghara	E(o)	0.81	4,695
1324	0262K1201324	29.249	82.564	Ghaghara	M(o)	29.00	4,647	1397	0262L1301397	28.846	82.819	Ghaghara	E(o)	0.85	4,549
1325	0262K1201325	29.245	82.548	Ghaghara	M(o)	0.25	4,995	1398	0262L1301398	28.828	82.861	Ghaghara	E(o)	1.09	4,676
1326	0262K1201326	29.243	82.723	Ghaghara	E(o)	0.29	4,600	1399	0262L1301399	28.828	82.862	Ghaghara	M(o)	0.33	4,710
1327	0262K1201327	29.241	82.527	Ghaghara	M(o)	0.62	5,005	1400	0262L1301400	28.819	82.867	Ghaghara	E(o)	18.36	4,429
1328	0262K1201328	29.225	82.706	Ghaghara	E(o)	0.25	5,197	1401	0262L1301401	28.811	82.769	Ghaghara	M(o)	0.45	4,868
1329	0262K1201329	29.216	82.563	Ghaghara	M(o)	2.45	5,002	1402	0262L1301402	28.790	82.981	Ghaghara	E(c)	10.60	4,796
1330	0262K1201330	29.215	82.724	Ghaghara	E(o)	1.12	5,111	1403	0262L1301403	28.784	82.977	Ghaghara	E(o)	1.12	4,755
1331	0262K1201331	29.215	82.503	Ghaghara	E(o)	1.91	4,491	1404	0262L1301404	28.772	82.963	Ghaghara	E(o)	1.33	4,688
1332	0262K1201332	29.212	82.681	Ghaghara	E(o)	0.29	5,114	1405	0262O0201405	29.662	83.011	Ghaghara	M(o)	0.53	5,497
1333	0262K1201333	29.194	82.546	Ghaghara	E(o)	35.80	4,693	1406	0262O0201406	29.647	83.033	Ghaghara	E(o)	0.30	5,469
1334	0262K1201334	29.185	82.563	Ghaghara	E(o)	16.36	4,597	1407	0262O0201407	29.639	83.034	Ghaghara	E(o)	0.71	5,521
1335	0262K1201335	29.180	82.517	Ghaghara	E(o)	6.87	4,475	1408	0262O0201408	29.613	83.128	Ghaghara	E(o)	2.33	5,270
1336	0262K1201336	29.113	82.716	Ghaghara	M(o)	1.07	4,779	1409	0262O0201409	29.611	83.211	Ghaghara	E(o)	7.05	5,245
1337	0262K1401337	29.735	82.752	Ghaghara	M(o)	0.40	5,404	1410	0262O0201410	29.608	83.099	Ghaghara	E(o)	0.34	5,335
1338	0262K1401338	29.734	82.751	Ghaghara	M(o)	0.60	5,299	1411	0262O0201411	29.604	83.067	Ghaghara	E(o)	1.25	5,468
1339	0262K1401339	29.718	82.770	Ghaghara	M(o)	1.37	5,374	1412	0262O0201412	29.602	83.209	Ghaghara	E(o)	6.21	5,232
1340	0262K1401340	29.718	82.755	Ghaghara	M(o)	0.53	5,271	1413	0262O0201413	29.602	83.191	Ghaghara	E(o)	0.29	5,483
1341	0262K1401341	29.693	82.937	Ghaghara	M(o)	2.50	5,501	1414	0262O0201414	29.597	83.051	Ghaghara	M(o)	0.44	5,351

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
1415	0262O0201415	29.593	83.051	Ghaghara	M(o)	0.25	5,550	1488	0262O0801488	29.196	83.435	Ghaghara	M(o)	0.39	5,312
1416	0262O0201416	29.586	83.184	Ghaghara	E(o)	1.09	5,330	1489	0262O0801489	29.194	83.438	Ghaghara	M(o)	1.02	5,324
1417	0262O0201417	29.571	83.189	Ghaghara	E(o)	5.68	5,222	1490	0262O0801490	29.190	83.478	Ghaghara	E(o)	1.84	5,484
1418	0262O0201418	29.554	83.244	Ghaghara	E(o)	0.89	5,262	1491	0262O0801491	29.175	83.486	Ghaghara	E(o)	0.34	5,341
1419	0262O0201419	29.542	83.210	Ghaghara	E(o)	0.71	4,789	1492	0262O0801492	29.174	83.485	Ghaghara	E(o)	0.57	5,336
1420	0262O0401420	29.237	83.110	Ghaghara	E(o)	1.05	5,010	1493	0262O0801493	29.162	83.491	Ghaghara	E(o)	3.84	5,480
1421	0262O0401421	29.201	83.231	Ghaghara	O	0.64	4,802	1494	0262O0801494	29.121	83.308	Ghaghara	E(o)	0.44	5,251
1422	0262O0401422	29.201	83.227	Ghaghara	O	0.41	4,843	1495	0262O0801495	29.111	83.318	Ghaghara	M(o)	1.11	5,342
1423	0262O0401423	29.176	83.249	Ghaghara	O	0.66	4,993	1496	0262O0801496	29.110	83.317	Ghaghara	M(o)	0.27	5,355
1424	0262O0401424	29.173	83.222	Ghaghara	E(o)	0.50	5,050	1497	0262O0801497	29.067	83.383	Ghaghara	E(o)	1.80	5,246
1425	0262O0401425	29.172	83.012	Ghaghara	M(o)	3.70	5,191	1498	0262O0801498	29.045	83.286	Ghaghara	E(o)	0.25	5,197
1426	0262O0401426	29.167	83.247	Ghaghara	E(o)	2.80	5,071	1499	0262O0801499	29.040	83.265	Ghaghara	M(o)	1.31	5,237
1427	0262O0401427	29.129	83.081	Ghaghara	M(o)	0.98	5,387	1500	0262O0801500	29.037	83.281	Ghaghara	E(o)	1.85	5,234
1428	0262O0401428	29.122	83.036	Ghaghara	M(o)	0.77	5,080	1501	0262O0801501	29.018	83.258	Ghaghara	M(o)	0.98	5,235
1429	0262O0401429	29.114	83.021	Ghaghara	E(o)	1.12	4,881	1502	0262O0801502	29.016	83.255	Ghaghara	M(o)	0.86	5,315
1430	0262O0401430	29.109	83.070	Ghaghara	M(o)	4.27	5,277	1503	0262O0801503	29.014	83.255	Ghaghara	M(o)	0.41	5,324
1431	0262O0401431	29.108	83.026	Ghaghara	M(o)	12.95	4,884	1504	0262O0801504	29.014	83.287	Ghaghara	M(o)	0.60	5,247
1432	0262O0401432	29.079	83.039	Ghaghara	E(o)	3.03	4,967	1505	0262O0801505	29.012	83.277	Ghaghara	M(o)	0.92	5,457
1433	0262O0401433	29.071	83.030	Ghaghara	E(o)	0.46	5,216	1506	0262O0801506	29.004	83.280	Ghaghara	M(o)	1.01	5,339
1434	0262O0401434	29.070	83.036	Ghaghara	M(o)	0.73	5,096	1507	0262O1101507	29.251	83.510	Ghaghara	E(o)	0.35	5,664
1435	0262O0401435	29.051	83.036	Ghaghara	M(o)	0.84	5,105	1508	0262O1201508	29.232	83.503	Ghaghara	E(o)	2.61	5,413
1436	0262O0401436	29.020	83.029	Ghaghara	E(o)	1.48	5,223	1509	0262O1201509	29.230	83.502	Ghaghara	E(o)	2.70	5,408
1437	0262O0401437	29.016	83.027	Ghaghara	E(c)	4.97	5,034	1510	0262O1201510	29.229	83.719	Gandak	E(o)	0.75	5,406
1438	0262O0401438	29.008	83.178	Ghaghara	E(o)	0.25	5,149	1511	0262O1201511	29.227	83.717	Gandak	E(o)	0.92	5,397
1439	0262O0401439	29.006	83.232	Ghaghara	E(o)	1.75	5,368	1512	0262O1201512	29.218	83.702	Gandak	M(o)	42.49	5,426
1440	0262O0401440	29.005	83.208	Ghaghara	M(o)	0.32	5,352	1513	0262O1201513	29.217	83.503	Ghaghara	E(o)	0.63	5,421
1441	0262O0401441	29.002	83.182	Ghaghara	M(o)	9.04	4,992	1514	0262O1201514	29.201	83.684	Gandak	M(e)	22.46	5,482
1442	0262O0401442	29.000	83.185	Ghaghara	M(o)	0.51	5,018	1515	0262O1201515	29.201	83.515	Ghaghara	E(o)	1.86	5,519
1443	0262O0601443	29.570	83.270	Ghaghara	E(o)	2.64	5,345	1516	0262O1201516	29.199	83.564	Ghaghara	E(o)	3.34	5,558
1444	0262O0601444	29.568	83.264	Ghaghara	E(o)	3.09	5,281	1517	0262O1201517	29.198	83.744	Gandak	M(o)	0.70	5,790
1445	0262O0601445	29.559	83.270	Ghaghara	E(o)	1.31	5,441	1518	0262O1201518	29.198	83.665	Gandak	E(o)	3.99	5,696
1446	0262O0601446	29.541	83.250	Ghaghara	E(o)	8.78	5,433	1519	0262O1201519	29.195	83.735	Gandak	M(o)	1.66	5,842
1447	0262O0601447	29.525	83.261	Ghaghara	E(o)	2.39	5,389	1520	0262O1201520	29.194	83.556	Ghaghara	E(o)	0.74	5,485
1448	0262O0601448	29.511	83.260	Ghaghara	E(o)	0.25	5,332	1521	0262O1201521	29.193	83.668	Gandak	E(o)	1.17	5,682
1449	0262O0601449	29.510	83.253	Ghaghara	E(o)	0.26	5,208	1522	0262O1201522	29.193	83.506	Ghaghara	E(o)	6.82	5,553
1450	0262O0701450	29.496	83.288	Ghaghara	E(o)	1.78	5,344	1523	0262O1201523	29.193	83.522	Ghaghara	E(o)	1.73	5,415
1451	0262O0701451	29.494	83.313	Ghaghara	E(o)	0.31	5,292	1524	0262O1201524	29.192	83.580	Ghaghara	E(o)	2.99	5,535
1452	0262O0701452	29.492	83.338	Ghaghara	E(o)	1.13	5,392	1525	0262O1201525	29.188	83.562	Ghaghara	E(o)	1.54	5,445
1453	0262O0701453	29.477	83.302	Ghaghara	E(o)	0.37	5,096	1526	0262O1201526	29.188	83.510	Ghaghara	E(o)	0.41	5,467
1454	0262O0701454	29.434	83.339	Ghaghara	E(o)	1.30	5,352	1527	0262O1201527	29.187	83.745	Gandak	M(o)	0.49	5,683
1455	0262O0701455	29.409	83.403	Ghaghara	E(o)	0.77	5,373	1528	0262O1201528	29.185	83.512	Ghaghara	E(o)	1.93	5,450
1456	0262O0701456	29.405	83.405	Ghaghara	E(o)	0.86	5,322	1529	0262O1201529	29.184	83.507	Ghaghara	E(o)	0.55	5,472
1457	0262O0701457	29.380	83.386	Ghaghara	E(o)	0.60	5,161	1530	0262O1201530	29.183	83.705	Gandak	M(e)	2.33	5,704
1458	0262O0701458	29.378	83.387	Ghaghara	E(o)	0.37	5,170	1531	0262O1201531	29.182	83.512	Ghaghara	E(o)	0.40	5,452
1459	0262O0701459	29.377	83.390	Ghaghara	E(o)	11.85	5,175	1532	0262O1201532	29.180	83.707	Gandak	M(o)	0.65	5,684
1460	0262O0701460	29.372	83.394	Ghaghara	E(o)	0.97	5,259	1533	0262O1201533	29.175	83.748	Gandak	O	17.07	5,360
1461	0262O0701461	29.367	83.402	Ghaghara	E(o)	1.08	5,326	1534	0262O1201534	29.173	83.711	Gandak	E(o)	7.83	5,642
1462	0262O0701462	29.366	83.404	Ghaghara	M(o)	0.28	5,335	1535	0262O1201535	29.173	83.508	Ghaghara	M(o)	4.09	5,548
1463	0262O0701463	29.362	83.395	Ghaghara	M(o)	0.27	5,473	1536	0262O1201536	29.170	83.552	Ghaghara	E(o)	1.31	5,302
1464	0262O0701464	29.323	83.255	Ghaghara	O	0.41	4,720	1537	0262O1201537	29.169	83.694	Gandak	E(o)	0.30	5,675
1465	0262O0701465	29.312	83.437	Ghaghara	E(o)	0.54	5,534	1538	0262O1201538	29.168	83.563	Ghaghara	E(o)	3.52	5,477
1466	0262O0701466	29.312	83.424	Ghaghara	E(o)	0.61	5,343	1539	0262O1201539	29.164	83.555	Ghaghara	E(o)	1.02	5,384
1467	0262O0701467	29.292	83.444	Ghaghara	E(o)	2.26	5,500	1540	0262O1201540	29.162	83.661	Ghaghara	E(o)	2.58	5,746
1468	0262O0701468	29.259	83.495	Ghaghara	M(o)	0.90	5,624	1541	0262O1201541	29.161	83.664	Gandak	E(o)	0.47	5,739
1469	0262O0701469	29.255	83.493	Ghaghara	M(o)	2.18	5,576	1542	0262O1201542	29.160	83.624	Ghaghara	E(o)	1.65	5,592
1470	0262O0701470	29.253	83.492	Ghaghara	M(o)	1.02	5,554	1543	0262O1201543	29.158	83.549	Ghaghara	E(o)	2.98	5,430
1471	0262O0701471	29.252	83.315	Ghaghara	E(o)	3.40	5,241	1544	0262O1201544	29.152	83.677	Gandak	M(o)	0.50	5,666
1472	0262O0701472	29.251	83.321	Ghaghara	E(o)	0.40	5,256	1545	0262O1201545	29.149	83.546	Ghaghara	E(o)	3.89	5,447
1473	0262O0801473	29.247	83.464	Ghaghara	E(o)	0.78	5,458	1546	0262O1201546	29.143	83.721	Gandak	E(o)	0.40	5,811
1474	0262O0801474	29.246	83.328	Ghaghara	M(o)	0.94	5,315	1547	0262O1201547	29.140	83.525	Ghaghara	E(o)	1.34	5,391
1475	0262O0801475	29.246	83.337	Ghaghara	M(o)	0.37	5,469	1548	0262O1201548	29.131	83.734	Gandak	E(o)	1.35	5,697
1476	0262O0801476	29.240	83.334	Ghaghara	I(s)	0.71	5,582	1549	0262O1201549	29.123	83.563	Ghaghara	E(o)	0.58	5,446
1477	0262O0801477	29.233	83.342	Ghaghara	M(o)	1.86	5,445	1550	0262O1201550	29.119	83.640	Ghaghara	M(o)	1.18	5,593
1478	0262O0801478	29.226	83.354	Ghaghara	M(o)	0.89	5,365	1551	0262O1201551	29.117	83.738	Gandak	M(o)	11.61	5,517
1479	0262O0801479	29.226	83.458	Ghaghara	E(o)	1.48	5,508	1552	0262O1201552	29.115	83.631	Ghaghara	E(o)	0.26	5,597
1480	0262O0801480	29.222	83.333	Ghaghara	E(o)	2.64	5,278	1553	0262O1201553	29.113	83.749	Gandak	E(o)	2.27	5,456
1481	0262O0801481	29.215	83.457	Ghaghara	E(o)	2.28	5,601	1554	0262O1201554	29.109	83.675	Gandak	M(o)	0.57	5,690
1482	0262O0801482	29.210	83.436	Ghaghara	M(o)	1.27	5,376	1555	0262O1201555	29.106	83.672	Gandak	M(o)	1.19	5,653
1483	0262O0801483	29.210	83.445	Ghaghara	M(o)	0.51	5,600	1556	0262O1201556	29.104	83.638	Gandak	E(o)	2.20	5,690
1484	0262O0801484	29.206	83.498	Ghaghara	M(o)	0.97	5,507	1557	0262O1201557	29.103	83.675	Gandak	M(o)	0.40	5,678
1485	0262O0801485	29.200	83.489	Ghaghara	E(o)	6.06	5,522	1558	0262O1201558	29.102	83.630	Gandak	M(o)	6.47	5,763
1486	0262O0801486	29.199	83.427	Ghaghara	E(o)	0.42	5,247	1559	0262O1201559	29.100	83.627	Gandak	M(o)	1.08	5,754
1487	0262O0801487	29.196	83.433	Ghaghara	M(o)	0.84	5,304	1560	0262O1201560	29.099	83.585	Ghaghara	E(o)	0.73	5,315

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
1561	0262O1201561	29.098	83.586	Ghaghara	E(o)	0.54	5,336	1634	0262O1601634	29.169	83.765	Gandak	M(o)	1.75	5,540
1562	0262O1201562	29.094	83.607	Ghaghara	E(o)	1.68	5,581	1635	0262O1601635	29.147	83.803	Gandak	M(o)	2.17	5,666
1563	0262O1201563	29.093	83.531	Ghaghara	O	2.89	4,954	1636	0262O1601636	29.137	83.790	Gandak	M(o)	3.07	5,900
1564	0262O1201564	29.093	83.637	Gandak	E(o)	2.17	5,599	1637	0262O1601637	29.118	83.779	Gandak	M(o)	1.98	5,651
1565	0262O1201565	29.092	83.633	Gandak	E(o)	1.07	5,598	1638	0262O1601638	29.115	83.786	Gandak	M(e)	6.00	5,592
1566	0262O1201566	29.092	83.627	Gandak	E(o)	0.67	5,620	1639	0262O1601639	29.110	83.757	Gandak	E(o)	2.31	5,411
1567	0262O1201567	29.090	83.714	Gandak	M(o)	0.34	5,660	1640	0262O1601640	29.056	83.780	Gandak	M(o)	0.66	5,592
1568	0262O1201568	29.090	83.634	Gandak	E(o)	2.06	5,589	1641	0262O1601641	29.006	83.759	Gandak	E(o)	0.91	5,633
1569	0262O1201569	29.088	83.628	Gandak	M(o)	0.91	5,678	1642	0262P0101642	28.996	83.195	Ghaghara	I(s)	0.65	5,290
1570	0262O1201570	29.087	83.599	Ghaghara	E(o)	0.56	5,457	1643	0262P0101643	28.993	83.173	Ghaghara	M(e)	15.98	4,821
1571	0262O1201571	29.085	83.617	Ghaghara	M(o)	0.46	5,556	1644	0262P0101644	28.992	83.216	Ghaghara	E(o)	2.45	5,199
1572	0262O1201572	29.085	83.615	Ghaghara	M(o)	0.30	5,553	1645	0262P0101645	28.992	83.201	Ghaghara	M(o)	1.99	5,142
1573	0262O1201573	29.085	83.748	Gandak	M(o)	1.79	5,754	1646	0262P0101646	28.968	83.208	Ghaghara	M(e)	8.34	5,253
1574	0262O1201574	29.080	83.655	Gandak	E(o)	2.99	5,437	1647	0262P0101647	28.967	83.210	Ghaghara	M(o)	1.54	5,271
1575	0262O1201575	29.077	83.669	Gandak	E(o)	1.93	5,375	1648	0262P0101648	28.965	83.209	Ghaghara	M(o)	0.26	5,251
1576	0262O1201576	29.077	83.609	Ghaghara	O	0.32	5,484	1649	0262P0101649	28.964	83.179	Ghaghara	M(o)	0.73	5,089
1577	0262O1201577	29.076	83.644	Gandak	E(o)	1.49	5,515	1650	0262P0101650	28.962	83.207	Ghaghara	M(o)	0.87	5,078
1578	0262O1201578	29.076	83.652	Gandak	M(o)	2.63	5,480	1651	0262P0101651	28.959	83.187	Ghaghara	M(e)	27.62	5,071
1579	0262O1201579	29.076	83.648	Gandak	E(o)	0.59	5,483	1652	0262P0101652	28.818	83.074	Ghaghara	E(o)	1.57	4,867
1580	0262O1201580	29.076	83.637	Gandak	M(o)	0.52	5,583	1653	0262P0101653	28.817	83.109	Ghaghara	M(o)	0.72	5,198
1581	0262O1201581	29.075	83.654	Gandak	M(o)	1.55	5,466	1654	0262P0101654	28.815	83.109	Ghaghara	M(o)	0.57	5,182
1582	0262O1201582	29.072	83.645	Gandak	M(o)	3.91	5,527	1655	0262P0101655	28.805	83.124	Ghaghara	M(o)	0.44	4,865
1583	0262O1201583	29.069	83.649	Gandak	E(o)	1.18	5,572	1656	0262P0101656	28.804	83.122	Ghaghara	M(o)	0.49	4,890
1584	0262O1201584	29.063	83.661	Gandak	E(o)	0.55	5,644	1657	0262P0101657	28.803	83.068	Ghaghara	M(o)	2.43	4,910
1585	0262O1201585	29.051	83.605	Ghaghara	M(o)	3.06	5,552	1658	0262P0101658	28.802	83.102	Ghaghara	M(o)	0.70	5,268
1586	0262O1201586	29.046	83.603	Ghaghara	M(o)	0.30	5,564	1659	0262P0101659	28.802	83.063	Ghaghara	M(l)	0.29	4,952
1587	0262O1201587	29.046	83.674	Gandak	M(e)	12.14	5,431	1660	0262P0101660	28.798	83.186	Ghaghara	M(e)	6.30	5,301
1588	0262O1201588	29.041	83.598	Ghaghara	E(o)	0.65	5,422	1661	0262P0101661	28.794	83.151	Ghaghara	I(s)	0.37	5,027
1589	0262O1201589	29.039	83.669	Gandak	M(o)	7.88	5,480	1662	0262P0101662	28.793	83.153	Ghaghara	I(s)	0.94	5,050
1590	0262O1201590	29.038	83.664	Gandak	M(o)	0.54	5,508	1663	0262P0101663	28.790	83.041	Ghaghara	M(o)	0.97	5,132
1591	0262O1201591	29.030	83.582	Ghaghara	M(o)	0.59	5,567	1664	0262P0101664	28.790	83.015	Ghaghara	M(o)	1.24	5,015
1592	0262O1201592	29.024	83.632	Gandak	M(o)	3.05	5,644	1665	0262P0101665	28.789	83.096	Ghaghara	M(o)	0.25	5,413
1593	0262O1201593	29.022	83.643	Gandak	M(o)	0.52	5,665	1666	0262P0101666	28.787	83.180	Ghaghara	M(o)	1.70	5,426
1594	0262O1201594	29.022	83.639	Gandak	M(o)	1.06	5,610	1667	0262P0101667	28.780	83.042	Ghaghara	M(o)	1.39	4,902
1595	0262O1201595	29.022	83.620	Gandak	M(o)	1.03	5,676	1668	0262P0101668	28.778	83.133	Ghaghara	M(o)	0.44	5,499
1596	0262O1201596	29.022	83.683	Gandak	I(s)	1.22	5,870	1669	0262P0101669	28.778	83.046	Ghaghara	M(o)	5.96	4,945
1597	0262O1201597	29.019	83.634	Gandak	M(o)	0.43	5,557	1670	0262P0101670	28.777	83.127	Ghaghara	M(o)	0.70	5,528
1598	0262O1201598	29.018	83.604	Ghaghara	E(o)	0.76	5,520	1671	0262P0101671	28.776	83.131	Ghaghara	M(o)	0.70	5,521
1599	0262O1201599	29.017	83.635	Gandak	M(o)	4.11	5,551	1672	0262P0101672	28.773	83.041	Ghaghara	M(o)	0.91	4,997
1600	0262O1201600	29.015	83.668	Gandak	M(o)	0.50	5,709	1673	0262P0101673	28.771	83.032	Ghaghara	M(o)	1.10	4,925
1601	0262O1201601	29.014	83.672	Gandak	I(s)	0.41	5,691	1674	0262P0101674	28.769	83.036	Ghaghara	M(o)	2.78	5,022
1602	0262O1201602	29.009	83.633	Gandak	M(o)	0.25	5,552	1675	0262P0101675	28.769	83.121	Ghaghara	M(o)	0.38	5,578
1603	0262O1201603	29.008	83.649	Gandak	E(o)	0.33	5,595	1676	0262P0101676	28.764	83.016	Ghaghara	E(o)	0.59	4,872
1604	0262O1201604	29.008	83.634	Gandak	M(o)	0.44	5,556	1677	0262P0101677	28.760	83.059	Ghaghara	E(o)	1.75	5,047
1605	0262O1201605	29.007	83.503	Ghaghara	M(o)	1.01	5,426	1678	0262P0101678	28.758	83.032	Ghaghara	E(o)	0.28	5,059
1606	0262O1201606	29.005	83.689	Gandak	E(o)	1.63	5,555	1679	0262P0101679	28.756	83.039	Ghaghara	M(o)	0.90	5,034
1607	0262O1201607	29.005	83.553	Ghaghara	M(o)	0.81	5,405	1680	0262P0101680	28.756	83.071	Ghaghara	E(o)	0.46	4,785
1608	0262O1201608	29.003	83.718	Gandak	M(o)	0.65	5,632	1681	0262P0101681	28.752	83.069	Ghaghara	E(o)	0.42	4,793
1609	0262O1201609	29.002	83.610	Ghaghara	M(o)	0.53	5,584	1682	0262P0201682	28.749	83.069	Ghaghara	E(o)	1.40	4,767
1610	0262O1201610	29.001	83.571	Ghaghara	M(o)	0.38	5,372	1683	0262P0201683	28.738	83.045	Ghaghara	E(o)	2.75	4,760
1611	0262O1501611	29.330	83.819	Gandak	I(s)	0.34	6,056	1684	0262P0201684	28.733	83.032	Ghaghara	E(o)	0.28	4,610
1612	0262O1501612	29.324	83.817	Gandak	I(s)	0.43	5,999	1685	0262P0201685	28.727	83.121	Ghaghara	M(o)	0.69	5,158
1613	0262O1501613	29.323	83.816	Gandak	I(s)	0.28	5,998	1686	0262P0201686	28.723	83.095	Ghaghara	M(o)	0.49	4,761
1614	0262O1501614	29.317	83.848	Gandak	E(o)	0.26	5,560	1687	0262P0201687	28.723	83.118	Ghaghara	M(o)	0.36	5,190
1615	0262O1501615	29.310	83.832	Gandak	M(o)	0.41	5,755	1688	0262P0201688	28.722	83.093	Ghaghara	M(o)	3.25	4,759
1616	0262O1501616	29.308	83.867	Gandak	I(s)	0.73	5,971	1689	0262P0201689	28.720	83.137	Ghaghara	M(l)	0.73	5,058
1617	0262O1501617	29.308	83.816	Gandak	I(s)	1.36	5,988	1690	0262P0201690	28.719	83.130	Ghaghara	I(s)	0.42	5,074
1618	0262O1501618	29.300	83.819	Gandak	I(s)	2.13	5,989	1691	0262P0201691	28.718	83.126	Ghaghara	E(o)	1.28	5,058
1619	0262O1501619	29.300	83.863	Gandak	M(o)	0.85	5,894	1692	0262P0201692	28.718	83.112	Ghaghara	M(o)	0.26	5,159
1620	0262O1501620	29.290	83.818	Gandak	M(lg)	0.37	5,924	1693	0262P0201693	28.716	83.111	Ghaghara	M(o)	1.48	5,064
1621	0262O1501621	29.288	83.820	Gandak	M(lg)	0.28	5,897	1694	0262P0201694	28.707	83.108	Ghaghara	E(o)	0.60	4,820
1622	0262O1501622	29.283	83.806	Gandak	M(lg)	0.38	6,033	1695	0262P0201695	28.707	83.163	Ghaghara	M(o)	1.33	5,012
1623	0262O1501623	29.282	83.853	Gandak	M(o)	0.25	5,583	1696	0262P0201696	28.707	83.106	Ghaghara	E(o)	1.73	4,811
1624	0262O1501624	29.281	83.800	Gandak	I(s)	0.46	6,044	1697	0262P0201697	28.703	83.161	Ghaghara	E(o)	0.92	5,120
1625	0262O1501625	29.279	83.798	Gandak	I(s)	0.42	6,003	1698	0262P0201698	28.703	83.105	Ghaghara	E(o)	1.62	4,724
1626	0262O1501626	29.258	83.815	Gandak	M(o)	0.25	5,843	1699	0262P0201699	28.701	83.131	Ghaghara	E(o)	0.55	4,704
1627	0262O1601627	29.246	83.804	Gandak	M(lg)	0.83	5,844	1700	0262P0201700	28.681	83.208	Ghaghara	M(o)	2.13	4,815
1628	0262O1601628	29.246	83.796	Gandak	E(o)	1.79	5,867	1701	0262P0201701	28.670	83.126	Ghaghara	E(o)	0.46	4,884
1629	0262O1601629	29.245	83.797	Gandak	E(o)	0.99	5,864	1702	0262P0201702	28.667	83.137	Ghaghara	E(o)	0.56	4,697
1630	0262O1601630	29.243	83.802	Gandak	I(s)	0.92	5,901	1703	0262P0201703	28.665	83.097	Ghaghara	E(o)	1.71	4,444
1631	0262O1601631	29.227	83.807	Gandak	I(s)	0.36	5,897	1704	0262P0201704	28.661	83.146	Ghaghara	E(o)	0.32	4,475
1632	0262O1601632	29.205	83.848	Gandak	M(o)	1.89	5,424	1705	0262P0201705	28.658	83.107	Ghaghara	E(o)	3.67	4,480
1633	0262O1601633	29.178	83.851	Gandak	M(o)	0.38	5,655	1706	0262P0201706	28.652	83.187	Ghaghara	E(o)	0.91	4,325

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
1707	0262P0501707	28.999	83.287	Ghaghara	M(o)	4.75	5,429	1780	0262P1301780	28.784	83.995	Gandak	M(o)	0.72	4,939
1708	0262P0501708	28.981	83.298	Ghaghara	M(o)	0.52	5,357	1781	0262P1301781	28.775	83.907	Gandak	I(s)	0.68	5,731
1709	0262P0501709	28.980	83.300	Ghaghara	M(o)	1.16	5,360	1782	0262P1301782	28.770	83.910	Gandak	I(s)	0.32	5,652
1710	0262P0501710	28.979	83.286	Ghaghara	M(o)	0.28	5,469	1783	0262P1301783	28.768	83.897	Gandak	M(o)	0.27	5,717
1711	0262P0501711	28.964	83.277	Ghaghara	E(o)	0.35	5,286	1784	0262P1301784	28.752	83.935	Gandak	M(o)	0.57	5,385
1712	0262P0501712	28.929	83.495	Ghaghara	M(o)	0.49	5,432	1785	0262P1301785	28.752	83.929	Gandak	M(o)	1.15	5,210
1713	0262P0501713	28.928	83.429	Ghaghara	M(o)	1.27	5,432	1786	0262P1301786	28.751	83.928	Gandak	M(o)	0.26	5,214
1714	0262P0501714	28.926	83.428	Ghaghara	M(o)	0.26	5,384	1787	0262P1401787	28.749	83.931	Gandak	M(o)	0.61	5,197
1715	0262P0501715	28.912	83.463	Ghaghara	M(o)	0.55	5,393	1788	0262P1401788	28.744	83.997	Gandak	M(o)	1.58	4,906
1716	0262P0501716	28.908	83.461	Ghaghara	M(o)	0.83	5,402	1789	0262P1401789	28.728	83.891	Gandak	M(l)	1.07	5,158
1717	0262P0501717	28.906	83.463	Ghaghara	M(o)	1.09	5,401	1790	0262P1401790	28.726	83.890	Gandak	M(e)	14.99	5,103
1718	0262P0501718	28.905	83.463	Ghaghara	E(o)	2.47	5,400	1791	0262P1401791	28.725	83.903	Gandak	E(o)	1.99	5,114
1719	0262P0501719	28.896	83.466	Ghaghara	M(o)	1.71	5,569	1792	0262P1401792	28.723	83.840	Gandak	E(o)	0.35	5,396
1720	0262P0501720	28.893	83.466	Ghaghara	M(o)	1.02	5,566	1793	0262P1401793	28.722	83.891	Gandak	M(o)	1.54	5,092
1721	0262P0501721	28.893	83.337	Ghaghara	O	0.39	4,542	1794	0262P1401794	28.721	83.892	Gandak	M(o)	0.33	5,074
1722	0262P0501722	28.889	83.492	Ghaghara	M(o)	0.41	5,399	1795	0262P1401795	28.718	83.857	Gandak	M(o)	0.72	5,489
1723	0262P0501723	28.875	83.449	Ghaghara	M(o)	0.61	5,243	1796	0262P1401796	28.716	83.913	Gandak	E(o)	1.77	5,053
1724	0262P0501724	28.874	83.448	Ghaghara	E(o)	0.32	5,246	1797	0262P1401797	28.712	83.920	Gandak	E(o)	10.97	4,986
1725	0262P0501725	28.871	83.493	Ghaghara	M(o)	2.10	5,532	1798	0262P1401798	28.710	83.896	Gandak	E(o)	2.51	5,017
1726	0262P0501726	28.870	83.493	Ghaghara	M(o)	0.37	5,535	1799	0262P1401799	28.707	83.822	Gandak	M(l)	1.44	5,119
1727	0262P0501727	28.867	83.490	Ghaghara	M(l)	5.27	5,521	1800	0262P1401800	28.705	83.870	Gandak	M(o)	0.29	5,296
1728	0262P0501728	28.858	83.489	Ghaghara	M(o)	0.58	5,399	1801	0262P1401801	28.701	83.837	Gandak	M(o)	1.30	4,989
1729	0262P0501729	28.858	83.473	Ghaghara	M(o)	1.27	5,177	1802	0262P1401802	28.697	83.879	Gandak	M(o)	3.91	5,168
1730	0262P0501730	28.855	83.417	Ghaghara	M(o)	4.26	5,293	1803	0262P1401803	28.691	83.852	Gandak	M(o)	340.21	4,910
1731	0262P0501731	28.833	83.471	Ghaghara	M(o)	1.05	5,444	1804	0262P1401804	28.672	83.866	Gandak	M(l)	0.63	4,971
1732	0262P0501732	28.832	83.473	Ghaghara	M(o)	0.84	5,475	1805	0262P1401805	28.672	83.864	Gandak	M(l)	2.58	4,955
1733	0262P0501733	28.831	83.470	Ghaghara	M(o)	0.80	5,452	1806	0262P1401806	28.671	83.859	Gandak	M(o)	1.38	4,993
1734	0262P0501734	28.787	83.330	Ghaghara	M(e)	43.57	4,445	1807	0262P1401807	28.669	83.867	Gandak	I(s)	0.56	5,015
1735	0262P0601735	28.713	83.415	Gandak	M(lg)	0.48	5,084	1808	0262P1401808	28.641	83.788	Gandak	M(e)	8.33	4,070
1736	0262P0601736	28.699	83.328	Gandak	M(o)	0.41	5,044	1809	0262P1401809	28.548	83.863	Gandak	I(s)	0.33	4,177
1737	0262P0901737	29.000	83.610	Ghaghara	M(o)	0.42	5,580	1810	0262P1401810	28.534	83.870	Gandak	I(s)	0.98	4,033
1738	0262P0901738	28.999	83.747	Gandak	M(o)	0.64	5,730	1811	0262P1501811	28.469	83.773	Gandak	E(o)	1.67	4,378
1739	0262P0901739	28.998	83.668	Gandak	E(o)	1.88	5,461	1812	0271D0101812	28.930	84.206	Gandak	I(s)	1.45	5,416
1740	0262P0901740	28.986	83.714	Gandak	E(o)	1.98	5,620	1813	0271D0101813	28.879	84.225	Gandak	M(o)	0.51	5,392
1741	0262P0901741	28.984	83.730	Gandak	M(o)	1.74	5,584	1814	0271D0101814	28.873	84.102	Gandak	M(o)	0.28	5,554
1742	0262P0901742	28.984	83.708	Gandak	M(o)	0.50	5,576	1815	0271D0101815	28.863	84.238	Gandak	I(s)	0.27	5,108
1743	0262P0901743	28.982	83.727	Gandak	M(o)	1.59	5,566	1816	0271D0101816	28.853	84.066	Gandak	M(o)	0.37	5,616
1744	0262P0901744	28.978	83.627	Gandak	M(o)	0.41	5,541	1817	0271D0101817	28.851	84.064	Gandak	M(o)	0.54	5,578
1745	0262P0901745	28.974	83.740	Gandak	M(o)	2.01	5,717	1818	0271D0101818	28.851	84.061	Gandak	M(o)	0.45	5,500
1746	0262P0901746	28.973	83.743	Gandak	M(o)	1.22	5,695	1819	0271D0101819	28.850	84.060	Gandak	M(o)	0.27	5,502
1747	0262P0901747	28.973	83.744	Gandak	M(o)	0.27	5,685	1820	0271D0101820	28.848	84.179	Gandak	M(o)	0.68	5,642
1748	0262P0901748	28.970	83.640	Gandak	M(e)	3.05	5,516	1821	0271D0101821	28.844	84.134	Gandak	I(s)	0.47	5,378
1749	0262P0901749	28.969	83.606	Gandak	M(e)	1.18	5,496	1822	0271D0101822	28.841	84.203	Gandak	M(o)	0.47	5,510
1750	0262P0901750	28.967	83.605	Gandak	M(e)	2.90	5,496	1823	0271D0101823	28.830	84.223	Gandak	M(o)	1.18	5,612
1751	0262P0901751	28.962	83.574	Ghaghara	M(o)	0.95	5,465	1824	0271D0101824	28.830	84.145	Gandak	M(o)	2.31	5,479
1752	0262P0901752	28.962	83.633	Gandak	M(o)	2.15	5,540	1825	0271D0101825	28.826	84.150	Gandak	M(e)	10.74	5,406
1753	0262P0901753	28.958	83.733	Gandak	M(o)	1.46	5,858	1826	0271D0101826	28.826	84.054	Gandak	M(o)	0.85	5,413
1754	0262P0901754	28.958	83.575	Ghaghara	M(o)	1.59	5,534	1827	0271D0101827	28.825	84.057	Gandak	E(o)	0.26	5,396
1755	0262P0901755	28.954	83.737	Gandak	M(o)	2.98	5,649	1828	0271D0101828	28.825	84.035	Gandak	I(s)	0.35	5,377
1756	0262P0901756	28.950	83.717	Gandak	M(o)	0.70	5,739	1829	0271D0101829	28.820	84.125	Gandak	M(o)	3.76	5,311
1757	0262P0901757	28.942	83.598	Gandak	M(o)	2.75	5,483	1830	0271D0101830	28.820	84.248	Gandak	M(o)	0.43	5,599
1758	0262P0901758	28.904	83.533	Gandak	M(o)	0.68	5,634	1831	0271D0101831	28.779	84.084	Gandak	M(o)	0.55	5,304
1759	0262P0901759	28.886	83.527	Gandak	M(e)	30.92	5,578	1832	0271D0101832	28.771	84.118	Gandak	E(o)	1.14	5,467
1760	0262P0901760	28.854	83.550	Gandak	M(o)	1.14	5,617	1833	0271D0101833	28.761	84.069	Gandak	M(o)	4.98	5,108
1761	0262P0901761	28.854	83.530	Gandak	M(o)	1.73	5,543	1834	0271D0101834	28.751	84.083	Gandak	M(l)	2.70	5,145
1762	0262P0901762	28.845	83.541	Gandak	M(o)	0.56	5,427	1835	0271D0201835	28.716	84.076	Gandak	M(o)	0.34	5,264
1763	0262P0901763	28.833	83.627	Gandak	M(o)	2.63	5,502	1836	0271D0201836	28.701	84.124	Gandak	M(o)	1.12	5,286
1764	0262P1001764	28.634	83.560	Gandak	E(o)	2.17	4,277	1837	0271D0201837	28.679	84.061	Gandak	E(o)	3.43	4,622
1765	0262P1301765	28.996	83.755	Gandak	M(e)	2.43	5,553	1838	0271D0201838	28.663	84.017	Gandak	M(o)	5.30	3,512
1766	0262P1301766	28.855	83.915	Gandak	E(o)	0.53	5,055	1839	0271D0201839	28.638	84.016	Gandak	M(o)	2.39	4,649
1767	0262P1301767	28.843	83.941	Gandak	M(o)	1.62	5,635	1840	0271D0201840	28.603	84.093	Gandak	E(o)	0.85	4,946
1768	0262P1301768	28.840	83.964	Gandak	M(o)	0.87	5,777	1841	0271D0201841	28.600	84.092	Gandak	E(o)	0.34	4,960
1769	0262P1301769	28.833	83.961	Gandak	M(o)	0.86	5,976	1842	0271D0201842	28.583	84.084	Gandak	M(e)	1.65	4,864
1770	0262P1301770	28.829	83.965	Gandak	I(s)	0.65	5,760	1843	0271D0201843	28.548	84.042	Gandak	M(o)	0.86	4,625
1771	0262P1301771	28.824	83.999	Gandak	M(lg)	0.65	5,482	1844	0271D0301844	28.447	84.117	Gandak	E(o)	9.87	2,450
1772	0262P1301772	28.813	83.964	Gandak	M(o)	0.88	5,444	1845	0271D0301845	28.444	84.231	Gandak	M(o)	0.56	4,668
1773	0262P1301773	28.807	83.976	Gandak	M(o)	0.52	5,391	1846	0271D0301846	28.434	84.206	Gandak	E(o)	1.36	4,175
1774	0262P1301774	28.802	83.960	Gandak	M(o)	1.28	5,460	1847	0271D0301847	28.427	84.200	Gandak	E(o)	0.66	4,046
1775	0262P1301775	28.800	83.960	Gandak	M(o)	0.93	5,467	1848	0271D0301848	28.412	84.232	Gandak	E(o)	0.85	4,350
1776	0262P1301776	28.799	83.978	Ghaghara	M(o)	1.16	5,327	1849	0271D0301849	28.408	84.218	Gandak	E(o)	4.01	4,124
1777	0262P1301777	28.799	83.962	Gandak	M(o)	0.25	5,458	1850	0271D0501850	28.854	84.375	Gandak	I(d)	2.45	5,827
1778	0262P1301778	28.796	83.981	Gandak	M(o)	0.26	5,313	1851	0271D0501851	28.824	84.418	Gandak	M(o)	1.14	5,870
1779	0262P1301779	28.794	83.983	Gandak	M(o)	2.76	5,282	1852	0271D0501852	28.817	84.333	Gandak	M(e)	3.99	5,275

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
1853	0271D0501853	28.784	84.355	Gandak	M(o)	0.41	5,270	1926	0271D1101926	28.383	84.581	Gandak	E(c)	1.21	4,589
1854	0271D0501854	28.772	84.363	Gandak	E(o)	0.30	5,262	1927	0271D1101927	28.378	84.580	Gandak	E(o)	0.45	4,483
1855	0271D0601855	28.693	84.432	Gandak	I(s)	0.32	4,411	1928	0271D1101928	28.375	84.580	Gandak	E(o)	1.22	4,458
1856	0271D0601856	28.688	84.428	Gandak	I(s)	1.22	4,398	1929	0271D1101929	28.372	84.579	Gandak	E(o)	11.03	4,430
1857	0271D0601857	28.688	84.438	Gandak	E(o)	0.74	4,327	1930	0271D1101930	28.361	84.736	Gandak	M(o)	0.56	4,895
1858	0271D0601858	28.686	84.489	Gandak	E(o)	0.36	4,705	1931	0271D1101931	28.349	84.633	Gandak	E(o)	0.48	4,283
1859	0271D0601859	28.685	84.430	Gandak	I(s)	0.25	4,384	1932	0271D1101932	28.336	84.717	Gandak	E(o)	3.58	4,106
1860	0271D0601860	28.683	84.432	Gandak	I(s)	0.56	4,344	1933	0271D1101933	28.335	84.678	Gandak	M(o)	0.90	4,845
1861	0271D0601861	28.680	84.436	Gandak	I(s)	0.68	4,344	1934	0271D1301934	28.925	84.989	Gandak	M(o)	0.60	5,573
1862	0271D0601862	28.665	84.462	Gandak	M(l)	0.52	4,142	1935	0271D1301935	28.921	84.990	Gandak	E(o)	0.32	5,508
1863	0271D0601863	28.663	84.472	Gandak	M(l)	24.93	4,088	1936	0271D1301936	28.869	84.801	Gandak	E(o)	0.30	5,559
1864	0271D0601864	28.662	84.459	Gandak	E(o)	0.30	4,143	1937	0271D1301937	28.860	84.783	Gandak	M(o)	1.83	5,352
1865	0271D0601865	28.662	84.357	Gandak	I(s)	0.26	4,183	1938	0271D1301938	28.835	84.797	Gandak	M(o)	1.91	5,197
1866	0271D0601866	28.657	84.458	Gandak	M(l)	10.57	4,039	1939	0271D1301939	28.830	84.843	Gandak	M(o)	2.31	5,425
1867	0271D0601867	28.648	84.364	Gandak	M(l)	0.40	4,088	1940	0271D1301940	28.826	84.851	Gandak	M(o)	3.61	5,333
1868	0271D0601868	28.645	84.375	Gandak	I(s)	0.25	3,941	1941	0271D1301941	28.824	84.859	Gandak	M(o)	0.26	5,475
1869	0271D0601869	28.645	84.272	Gandak	M(o)	1.08	5,182	1942	0271D1301942	28.821	84.875	Gandak	M(o)	1.03	5,217
1870	0271D0601870	28.645	84.263	Gandak	M(o)	1.43	4,969	1943	0271D1301943	28.820	84.871	Gandak	M(o)	1.06	5,294
1871	0271D0601871	28.644	84.269	Gandak	M(o)	0.67	5,132	1944	0271D1301944	28.772	84.899	Gandak	M(o)	0.60	5,262
1872	0271D0601872	28.632	84.470	Gandak	M(o)	0.94	3,695	1945	0271D1401945	28.670	84.981	Gandak	E(o)	0.26	4,151
1873	0271D0601873	28.627	84.291	Gandak	M(e)	4.48	4,775	1946	0271D1401946	28.642	84.778	Gandak	E(o)	0.76	5,034
1874	0271D0601874	28.622	84.305	Gandak	M(o)	0.57	4,851	1947	0271D1401947	28.640	84.789	Gandak	M(o)	3.54	5,181
1875	0271D0601875	28.620	84.315	Gandak	M(o)	0.49	5,021	1948	0271D1401948	28.634	84.752	Gandak	M(o)	1.84	4,795
1876	0271D0601876	28.616	84.320	Gandak	M(o)	2.75	5,195	1949	0271D1401949	28.631	84.994	Gandak	M(o)	0.31	5,111
1877	0271D0601877	28.613	84.317	Gandak	M(o)	1.20	5,210	1950	0271D1401950	28.621	84.787	Gandak	M(o)	1.33	5,161
1878	0271D0601878	28.539	84.471	Gandak	M(o)	0.33	4,750	1951	0271D1401951	28.621	84.792	Gandak	M(o)	2.32	5,126
1879	0271D0601879	28.538	84.481	Gandak	M(o)	0.80	5,054	1952	0271D1401952	28.617	84.912	Gandak	M(e)	10.08	4,683
1880	0271D0701880	28.497	84.256	Gandak	M(e)	11.38	4,987	1953	0271D1401953	28.613	84.922	Gandak	M(e)	3.57	4,863
1881	0271D0701881	28.492	84.276	Gandak	M(o)	0.64	4,988	1954	0271D1401954	28.607	84.913	Gandak	I(s)	0.60	4,892
1882	0271D0701882	28.488	84.486	Gandak	M(e)	89.44	4,038	1955	0271D1401955	28.606	84.967	Gandak	I(s)	0.30	4,761
1883	0271D0701883	28.462	84.262	Gandak	M(e)	1.76	4,589	1956	0271D1401956	28.605	84.910	Gandak	I(s)	0.28	4,916
1884	0271D0701884	28.459	84.259	Gandak	M(e)	6.36	4,545	1957	0271D1401957	28.601	84.787	Gandak	M(o)	0.52	5,148
1885	0271D0701885	28.459	84.477	Gandak	E(o)	1.40	4,690	1958	0271D1401958	28.600	84.874	Gandak	M(o)	0.88	4,872
1886	0271D0701886	28.457	84.259	Gandak	M(o)	0.78	4,549	1959	0271D1401959	28.505	84.802	Gandak	E(o)	21.26	3,684
1887	0271D0701887	28.457	84.252	Gandak	M(o)	1.30	4,579	1960	0271D1501960	28.489	84.799	Gandak	E(o)	1.89	4,375
1888	0271D0701888	28.453	84.254	Gandak	M(l)	4.84	4,571	1961	0271D1501961	28.424	84.755	Gandak	I(s)	0.59	3,426
1889	0271D0701889	28.441	84.290	Gandak	E(o)	1.51	4,025	1962	0271D1501962	28.380	84.780	Gandak	E(c)	16.80	4,656
1890	0271D0901890	28.842	84.702	Gandak	M(o)	0.33	5,511	1963	0271D1501963	28.341	84.757	Gandak	E(o)	0.63	3,958
1891	0271D0901891	28.834	84.700	Gandak	M(o)	1.06	5,392	1964	0271D1501964	28.329	84.806	Gandak	E(o)	0.28	4,234
1892	0271D0901892	28.789	84.682	Gandak	M(o)	0.82	5,650	1965	0271D1501965	28.308	84.755	Gandak	E(o)	0.60	3,860
1893	0271D1001893	28.747	84.600	Gandak	M(e)	8.45	5,005	1966	0271H0101966	28.985	85.169	Gandak	E(o)	0.83	5,563
1894	0271D1001894	28.715	84.568	Gandak	M(o)	0.29	4,802	1967	0271H0101967	28.979	85.161	Gandak	E(o)	3.28	5,432
1895	0271D1001895	28.707	84.579	Gandak	M(o)	0.72	4,751	1968	0271H0101968	28.973	85.163	Gandak	E(o)	0.51	5,358
1896	0271D1001896	28.706	84.598	Gandak	I(s)	1.13	4,582	1969	0271H0101969	28.970	85.055	Gandak	E(o)	0.90	5,615
1897	0271D1001897	28.705	84.598	Gandak	I(s)	1.25	4,589	1970	0271H0101970	28.968	85.163	Gandak	E(o)	1.52	5,310
1898	0271D1001898	28.704	84.613	Gandak	I(s)	0.30	4,494	1971	0271H0101971	28.968	85.007	Gandak	E(o)	0.42	5,749
1899	0271D1001899	28.701	84.607	Gandak	I(s)	0.56	4,548	1972	0271H0101972	28.961	85.084	Gandak	E(o)	17.03	5,388
1900	0271D1001900	28.698	84.625	Gandak	M(o)	0.28	4,474	1973	0271H0101973	28.961	85.040	Gandak	E(o)	8.10	5,584
1901	0271D1001901	28.677	84.532	Gandak	M(o)	0.42	5,167	1974	0271H0101974	28.959	85.004	Gandak	E(o)	1.11	5,585
1902	0271D1001902	28.666	84.528	Gandak	M(o)	1.00	5,067	1975	0271H0101975	28.959	85.089	Gandak	E(o)	3.84	5,370
1903	0271D1001903	28.664	84.558	Gandak	M(l)	1.10	4,736	1976	0271H0101976	28.956	85.009	Gandak	E(o)	0.88	5,566
1904	0271D1001904	28.662	84.527	Gandak	I(s)	2.43	5,072	1977	0271H0101977	28.955	85.081	Gandak	M(o)	0.93	5,505
1905	0271D1001905	28.661	84.546	Gandak	I(s)	0.95	4,893	1978	0271H0101978	28.954	85.083	Gandak	M(o)	1.92	5,521
1906	0271D1001906	28.652	84.730	Gandak	E(o)	0.31	5,299	1979	0271H0101979	28.954	85.014	Gandak	E(o)	0.48	5,507
1907	0271D1001907	28.638	84.730	Gandak	M(o)	2.07	5,398	1980	0271H0101980	28.948	85.094	Gandak	E(o)	0.29	5,589
1908	0271D1001908	28.636	84.733	Gandak	M(o)	0.42	5,402	1981	0271H0101981	28.945	85.045	Gandak	E(o)	6.64	5,411
1909	0271D1001909	28.596	84.629	Gandak	M(e)	22.25	3,632	1982	0271H0101982	28.937	85.044	Gandak	E(o)	0.60	5,408
1910	0271D1001910	28.561	84.651	Gandak	M(l)	0.77	3,927	1983	0271H0101983	28.936	85.043	Gandak	E(o)	0.95	5,405
1911	0271D1001911	28.559	84.653	Gandak	M(o)	0.89	3,881	1984	0271H0101984	28.935	85.048	Gandak	E(o)	0.40	5,502
1912	0271D1001912	28.558	84.651	Gandak	I(s)	0.36	3,898	1985	0271H0101985	28.935	85.033	Gandak	E(o)	4.39	5,312
1913	0271D1001913	28.555	84.639	Gandak	E(o)	0.38	4,033	1986	0271H0101986	28.931	85.001	Gandak	M(o)	1.80	5,476
1914	0271D1001914	28.552	84.647	Gandak	I(s)	0.27	3,934	1987	0271H0101987	28.931	85.086	Gandak	M(o)	0.52	5,422
1915	0271D1001915	28.545	84.637	Gandak	I(s)	0.27	3,999	1988	0271H0101988	28.927	85.085	Gandak	M(o)	1.63	5,482
1916	0271D1001916	28.543	84.643	Gandak	M(o)	0.43	4,044	1989	0271H0101989	28.896	85.074	Gandak	E(o)	5.36	5,229
1917	0271D1001917	28.542	84.633	Gandak	I(s)	0.25	4,015	1990	0271H0101990	28.794	85.037	Gandak	M(o)	3.30	5,388
1918	0271D1001918	28.507	84.687	Gandak	I(s)	0.26	3,719	1991	0271H0101991	28.790	85.050	Gandak	M(o)	5.48	5,223
1919	0271D1001919	28.507	84.686	Gandak	I(s)	0.28	3,725	1992	0271H0101992	28.787	85.047	Gandak	M(o)	1.86	5,267
1920	0271D1101920	28.497	84.675	Gandak	I(s)	0.47	3,826	1993	0271H0101993	28.781	85.083	Gandak	M(o)	1.15	5,251
1921	0271D1101921	28.494	84.733	Gandak	M(o)	1.96	4,721	1994	0271H0101994	28.778	85.081	Gandak	M(o)	0.37	5,334
1922	0271D1101922	28.426	84.746	Gandak	I(s)	0.45	3,473	1995	0271H0101995	28.777	85.127	Gandak	M(o)	0.79	5,495
1923	0271D1101923	28.398	84.729	Gandak	M(o)	0.80	3,795	1996	0271H0101996	28.776	85.122	Gandak	M(o)	5.68	5,445
1924	0271D1101924	28.397	84.726	Gandak	E(o)	0.27	3,796	1997	0271H0101997	28.776	85.080	Gandak	M(o)	0.88	5,385
1925	0271D1101925	28.386	84.720	Gandak	I(s)	0.41	3,949	1998	0271H0101998	28.775	85.150	Gandak	M(o)	0.38	5,514

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
1999	0271H0101999	28.774	85.164	Gandak	I(s)	0.62	5,340	2072	0271H0602072	28.568	85.457	Gandak	M(e)	23.60	4,495
2000	0271H0102000	28.773	85.079	Gandak	M(o)	0.28	5,495	2073	0271H0602073	28.568	85.340	Gandak	M(o)	0.61	5,327
2001	0271H0102001	28.773	85.147	Gandak	M(o)	0.38	5,646	2074	0271H0602074	28.568	85.335	Gandak	M(o)	1.34	5,188
2002	0271H0102002	28.769	85.078	Gandak	I(s)	0.28	5,591	2075	0271H0602075	28.566	85.464	Gandak	M(e)	16.35	4,428
2003	0271H0102003	28.756	85.010	Gandak	E(o)	0.46	4,950	2076	0271H0602076	28.563	85.468	Gandak	M(e)	8.94	4,439
2004	0271H0202004	28.741	85.135	Gandak	M(o)	0.59	5,460	2077	0271H0602077	28.561	85.396	Gandak	M(o)	4.67	5,052
2005	0271H0202005	28.738	85.146	Gandak	M(o)	1.24	5,375	2078	0271H0602078	28.559	85.333	Gandak	I(s)	12.60	4,973
2006	0271H0202006	28.738	85.147	Gandak	M(o)	0.92	5,376	2079	0271H0602079	28.558	85.396	Gandak	M(o)	1.58	5,171
2007	0271H0202007	28.736	85.115	Gandak	M(o)	0.25	5,298	2080	0271H0602080	28.553	85.424	Gandak	M(e)	4.34	4,692
2008	0271H0202008	28.692	85.044	Gandak	M(o)	0.40	5,101	2081	0271H0602081	28.553	85.403	Gandak	M(o)	2.11	4,998
2009	0271H0202009	28.682	85.033	Gandak	M(o)	0.30	5,084	2082	0271H0602082	28.552	85.414	Gandak	M(o)	1.40	4,733
2010	0271H0202010	28.674	85.067	Gandak	M(o)	0.42	5,388	2083	0271H0602083	28.547	85.445	Gandak	M(o)	5.88	5,031
2011	0271H0202011	28.673	85.126	Gandak	M(o)	1.13	5,139	2084	0271H0602084	28.545	85.448	Gandak	M(o)	1.26	4,903
2012	0271H0202012	28.672	85.066	Gandak	M(e)	0.33	5,358	2085	0271H0602085	28.540	85.373	Gandak	E(o)	0.37	4,945
2013	0271H0202013	28.668	85.062	Gandak	M(o)	0.33	5,232	2086	0271H0602086	28.540	85.447	Gandak	M(o)	0.28	5,097
2014	0271H0202014	28.664	85.067	Gandak	M(o)	0.47	5,176	2087	0271H0602087	28.538	85.376	Gandak	E(o)	0.92	4,935
2015	0271H0202015	28.663	85.029	Gandak	M(o)	1.96	5,223	2088	0271H0602088	28.538	85.488	Gandak	M(o)	2.35	4,561
2016	0271H0202016	28.656	85.167	Gandak	E(o)	0.63	5,108	2089	0271H0602089	28.536	85.478	Gandak	M(o)	0.27	4,375
2017	0271H0202017	28.643	85.181	Gandak	E(o)	0.32	5,636	2090	0271H0602090	28.523	85.435	Gandak	M(o)	1.05	5,118
2018	0271H0202018	28.637	85.177	Gandak	M(o)	0.94	5,317	2091	0271H0602091	28.521	85.320	Gandak	M(o)	0.57	4,873
2019	0271H0202019	28.621	85.034	Gandak	M(e)	3.37	4,526	2092	0271H0602092	28.520	85.436	Gandak	M(o)	3.94	5,036
2020	0271H0202020	28.585	85.022	Gandak	M(o)	11.99	5,047	2093	0271H0602093	28.519	85.322	Gandak	M(o)	1.59	4,892
2021	0271H0302021	28.430	85.172	Gandak	E(o)	1.95	4,398	2094	0271H0602094	28.518	85.440	Gandak	M(o)	4.85	4,976
2022	0271H0302022	28.409	85.083	Gandak	I(s)	0.58	4,040	2095	0271H0602095	28.517	85.275	Gandak	M(o)	0.57	5,282
2023	0271H0302023	28.386	85.015	Gandak	M(o)	0.67	4,954	2096	0271H0602096	28.509	85.446	Gandak	E(c)	9.00	4,632
2024	0271H0302024	28.385	85.016	Gandak	M(o)	0.27	4,941	2097	0271H0602097	28.508	85.494	Gandak	M(e)	26.42	4,798
2025	0271H0302025	28.385	85.015	Gandak	M(o)	0.26	4,950	2098	0271H0602098	28.501	85.494	Gandak	E(o)	0.50	4,782
2026	0271H0302026	28.377	85.167	Gandak	M(o)	2.28	4,702	2099	0271H0602099	28.501	85.342	Gandak	M(o)	0.54	4,989
2027	0271H0302027	28.375	85.172	Gandak	M(o)	0.40	4,607	2100	0271H0702100	28.500	85.430	Gandak	M(o)	3.75	4,951
2028	0271H0302028	28.374	85.173	Gandak	M(o)	2.33	4,594	2101	0271H0702101	28.491	85.412	Gandak	M(o)	0.44	4,890
2029	0271H0302029	28.365	85.184	Gandak	M(l)	0.55	4,487	2102	0271H0702102	28.483	85.429	Gandak	M(o)	0.43	4,914
2030	0271H0302030	28.361	85.158	Gandak	I(s)	0.41	4,647	2103	0271H0702103	28.483	85.438	Gandak	E(o)	5.10	4,690
2031	0271H0302031	28.358	85.186	Gandak	M(o)	0.25	4,337	2104	0271H0702104	28.482	85.302	Gandak	M(o)	8.50	4,428
2032	0271H0302032	28.346	85.228	Gandak	M(o)	2.46	4,871	2105	0271H0702105	28.481	85.439	Gandak	E(o)	0.32	4,700
2033	0271H0302033	28.343	85.227	Gandak	M(o)	0.49	4,818	2106	0271H0702106	28.477	85.444	Gandak	E(o)	1.13	4,664
2034	0271H0302034	28.341	85.231	Gandak	M(o)	1.11	4,850	2107	0271H0702107	28.473	85.433	Gandak	M(o)	1.95	5,043
2035	0271H0302035	28.340	85.238	Gandak	M(o)	0.64	4,926	2108	0271H0702108	28.448	85.341	Gandak	E(o)	0.47	4,095
2036	0271H0302036	28.301	85.178	Gandak	M(e)	5.56	4,553	2109	0271H0702109	28.444	85.495	Gandak	M(o)	1.53	5,138
2037	0271H0302037	28.300	85.174	Gandak	M(o)	0.40	4,567	2110	0271H0702110	28.442	85.377	Gandak	E(o)	1.52	4,035
2038	0271H0302038	28.292	85.170	Gandak	M(e)	20.33	4,724	2111	0271H0702111	28.437	85.394	Gandak	E(o)	1.03	4,726
2039	0271H0302039	28.283	85.236	Gandak	E(o)	0.35	4,494	2112	0271H0702112	28.407	85.401	Gandak	E(o)	6.46	3,898
2040	0271H0302040	28.274	85.120	Gandak	E(c)	4.78	4,035	2113	0271H0702113	28.404	85.496	Gandak	M(o)	5.61	4,986
2041	0271H0302041	28.265	85.046	Gandak	E(o)	1.40	4,224	2114	0271H0702114	28.266	85.449	Gandak	M(o)	0.52	4,635
2042	0271H0502042	28.993	85.333	Gandak	E(o)	6.07	5,416	2115	0271H0802115	28.235	85.442	Gandak	E(o)	1.10	4,643
2043	0271H0502043	28.979	85.329	Gandak	E(o)	1.72	5,332	2116	0271H0802116	28.228	85.458	Gandak	M(o)	0.38	5,136
2044	0271H0502044	28.970	85.258	Gandak	E(o)	3.50	5,181	2117	0271H0802117	28.151	85.495	Gandak	M(o)	7.09	5,046
2045	0271H0502045	28.969	85.371	Gandak	E(o)	6.03	5,097	2118	0271H0802118	28.126	85.479	Gandak	O	0.60	4,685
2046	0271H0502046	28.960	85.287	Gandak	E(o)	3.71	5,187	2119	0271H0802119	28.124	85.469	Gandak	M(o)	14.08	4,787
2047	0271H0602047	28.721	85.441	Kosi	M(e)	5.54	5,358	2120	0271H0802120	28.111	85.486	Gandak	M(o)	2.20	4,936
2048	0271H0602048	28.716	85.425	Kosi	M(o)	0.66	5,747	2121	0271H0802121	28.110	85.437	Gandak	E(o)	0.38	4,568
2049	0271H0602049	28.715	85.435	Kosi	M(o)	1.32	5,445	2122	0271H0802122	28.093	85.426	Gandak	E(o)	0.73	4,709
2050	0271H0602050	28.714	85.450	Kosi	M(o)	3.23	5,407	2123	0271H0802123	28.089	85.457	Kosi	E(o)	0.55	4,778
2051	0271H0602051	28.707	85.394	Gandak	M(o)	0.86	5,179	2124	0271H0802124	28.086	85.457	Kosi	E(o)	0.59	4,740
2052	0271H0602052	28.682	85.461	Kosi	M(o)	3.88	5,423	2125	0271H0802125	28.086	85.459	Kosi	E(o)	0.28	4,731
2053	0271H0602053	28.676	85.410	Gandak	M(e)	21.04	5,447	2126	0271H0802126	28.086	85.421	Gandak	O	0.36	4,615
2054	0271H0602054	28.668	85.511	Kosi	E(o)	2.48	4,875	2127	0271H0802127	28.083	85.413	Gandak	O	12.59	4,393
2055	0271H0602055	28.663	85.385	Gandak	I(s)	0.49	4,823	2128	0271H0802128	28.082	85.455	Kosi	E(o)	0.35	4,695
2056	0271H0602056	28.662	85.475	Kosi	M(e)	20.42	5,217	2129	0271H0802129	28.081	85.416	Gandak	O	0.86	4,403
2057	0271H0602057	28.658	85.395	Gandak	I(s)	0.32	4,971	2130	0271H0802130	28.080	85.407	Gandak	O	15.16	4,327
2058	0271H0602058	28.651	85.402	Gandak	I(s)	0.36	5,082	2131	0271H0802131	28.080	85.399	Gandak	O	1.99	4,105
2059	0271H0602059	28.644	85.491	Kosi	M(e)	50.98	4,985	2132	0271H0802132	28.078	85.422	Gandak	O	1.04	4,578
2060	0271H0602060	28.642	85.474	Kosi	M(e)	33.30	5,135	2133	0271H0802133	28.077	85.418	Gandak	O	0.65	4,410
2061	0271H0602061	28.624	85.422	Gandak	M(o)	0.28	5,351	2134	0271H0802134	28.076	85.425	Gandak	O	1.33	4,609
2062	0271H0602062	28.624	85.424	Gandak	M(o)	0.42	5,317	2135	0271H0802135	28.073	85.410	Gandak	O	0.73	4,599
2063	0271H0602063	28.617	85.416	Gandak	M(o)	1.98	5,162	2136	0271H0802136	28.072	85.428	Gandak	O	3.30	4,635
2064	0271H0602064	28.616	85.413	Gandak	M(o)	0.94	5,178	2137	0271H0802137	28.071	85.422	Gandak	O	1.68	4,502
2065	0271H0602065	28.615	85.423	Gandak	M(o)	0.65	5,043	2138	0271H0802138	28.070	85.419	Gandak	O	1.85	4,512
2066	0271H0602066	28.615	85.420	Gandak	M(o)	2.35	5,036	2139	0271H0802139	28.066	85.423	Gandak	E(o)	4.14	4,533
2067	0271H0602067	28.612	85.430	Gandak	I(s)	0.27	4,904	2140	0271H0802140	28.061	85.406	Gandak	E(o)	0.65	4,485
2068	0271H0602068	28.607	85.448	Gandak	M(o)	0.66	5,382	2141	0271H0802141	28.061	85.389	Gandak	O	16.50	4,205
2069	0271H0602069	28.603	85.321	Gandak	M(o)	1.51	5,045	2142	0271H0802142	28.059	85.393	Gandak	O	0.57	4,339
2070	0271H0602070	28.603	85.454	Gandak	M(o)	0.36	5,193	2143	0271H0802143	28.054	85.397	Gandak	O	5.72	4,361
2071	0271H0602071	28.603	85.452	Gandak	M(o)	0.25	5,165	2144	0271H0802144	28.049	85.395	Gandak	O	8.12	4,253

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
2145	0271H0802145	28.045	85.398	Gandak	E(o)	1.10	4,278	2218	0271H1102218	28.416	85.638	Gandak	M(o)	0.50	5,215
2146	0271H0802146	28.044	85.389	Gandak	O	0.61	4,246	2219	0271H1102219	28.415	85.623	Gandak	M(o)	0.34	5,399
2147	0271H0802147	28.043	85.390	Gandak	O	0.63	4,247	2220	0271H1102220	28.412	85.600	Gandak	M(o)	1.04	5,483
2148	0271H0802148	28.040	85.402	Gandak	E(o)	0.95	4,545	2221	0271H1102221	28.409	85.579	Gandak	M(o)	0.90	5,417
2149	0271H0802149	28.039	85.397	Gandak	E(o)	3.36	4,412	2222	0271H1102222	28.409	85.578	Gandak	M(o)	0.35	5,418
2150	0271H0802150	28.029	85.397	Gandak	E(o)	2.01	4,264	2223	0271H1102223	28.406	85.580	Gandak	M(o)	0.41	5,333
2151	0271H0902151	28.958	85.746	Kosi	E(o)	0.41	5,617	2224	0271H1102224	28.405	85.588	Gandak	M(o)	10.51	5,251
2152	0271H1002152	28.629	85.519	Kosi	M(l)	2.49	5,101	2225	0271H1102225	28.404	85.643	Gandak	I(s)	0.36	5,143
2153	0271H1002153	28.623	85.510	Kosi	M(e)	118.78	5,127	2226	0271H1102226	28.404	85.518	Gandak	M(o)	0.30	5,018
2154	0271H1002154	28.616	85.527	Kosi	M(e)	103.58	5,113	2227	0271H1102227	28.404	85.646	Gandak	I(s)	0.37	5,172
2155	0271H1002155	28.595	85.567	Kosi	E(o)	1.95	5,799	2228	0271H1102228	28.404	85.605	Gandak	M(o)	12.01	5,265
2156	0271H1002156	28.591	85.577	Kosi	E(o)	2.88	5,849	2229	0271H1102229	28.402	85.518	Gandak	M(o)	0.50	4,988
2157	0271H1002157	28.589	85.573	Kosi	E(o)	1.90	5,889	2230	0271H1102230	28.402	85.532	Gandak	E(o)	0.51	4,885
2158	0271H1002158	28.580	85.596	Kosi	M(o)	26.15	5,436	2231	0271H1102231	28.397	85.650	Gandak	I(s)	0.34	5,155
2159	0271H1002159	28.575	85.583	Kosi	M(o)	22.13	5,438	2232	0271H1102232	28.397	85.569	Gandak	M(o)	6.86	5,301
2160	0271H1002160	28.573	85.659	Kosi	E(o)	10.62	5,238	2233	0271H1102233	28.397	85.631	Gandak	M(o)	2.73	5,400
2161	0271H1002161	28.564	85.611	Kosi	M(o)	0.38	5,368	2234	0271H1102234	28.397	85.645	Gandak	I(s)	0.32	5,150
2162	0271H1002162	28.562	85.602	Kosi	M(e)	129.19	5,361	2235	0271H1102235	28.395	85.567	Gandak	M(o)	0.61	5,272
2163	0271H1002163	28.561	85.592	Kosi	M(o)	0.96	5,383	2236	0271H1102236	28.395	85.568	Gandak	M(o)	0.89	5,261
2164	0271H1002164	28.548	85.616	Kosi	E(o)	21.83	5,443	2237	0271H1102237	28.393	85.570	Gandak	M(o)	0.66	5,242
2165	0271H1002165	28.532	85.609	Kosi	M(e)	540.55	5,352	2238	0271H1102238	28.392	85.614	Gandak	M(o)	1.16	5,297
2166	0271H1002166	28.527	85.638	Kosi	M(o)	31.01	5,299	2239	0271H1102239	28.392	85.502	Gandak	E(o)	0.36	4,977
2167	0271H1002167	28.524	85.636	Kosi	M(o)	0.26	5,306	2240	0271H1102240	28.390	85.590	Gandak	M(o)	0.46	5,194
2168	0271H1002168	28.523	85.635	Kosi	M(o)	0.45	5,303	2241	0271H1102241	28.390	85.508	Gandak	M(o)	0.49	5,086
2169	0271H1002169	28.519	85.540	Gandak	M(l)	0.62	4,960	2242	0271H1102242	28.389	85.609	Gandak	M(o)	0.69	5,172
2170	0271H1002170	28.515	85.622	Kosi	E(o)	2.87	5,539	2243	0271H1102243	28.388	85.641	Gandak	M(l)	0.44	5,129
2171	0271H1002171	28.513	85.537	Gandak	I(s)	0.26	4,836	2244	0271H1102244	28.385	85.651	Gandak	M(l)	0.59	5,149
2172	0271H1002172	28.508	85.557	Gandak	I(s)	0.86	5,016	2245	0271H1102245	28.379	85.593	Gandak	M(o)	1.75	5,293
2173	0271H1002173	28.507	85.555	Gandak	I(s)	1.16	4,963	2246	0271H1102246	28.375	85.628	Gandak	I(s)	0.72	4,928
2174	0271H1002174	28.506	85.546	Gandak	M(l)	0.43	4,890	2247	0271H1102247	28.373	85.593	Gandak	M(o)	1.42	5,278
2175	0271H1002175	28.504	85.521	Gandak	M(o)	3.45	5,229	2248	0271H1102248	28.372	85.568	Gandak	M(o)	3.89	5,154
2176	0271H1002176	28.501	85.519	Gandak	M(o)	0.35	5,298	2249	0271H1102249	28.369	85.560	Gandak	M(o)	0.31	4,935
2177	0271H1002177	28.494	85.636	Kosi	M(e)	490.68	5,278	2250	0271H1102250	28.365	85.645	Gandak	M(o)	0.50	5,534
2178	0271H1102178	28.497	85.740	Kosi	M(o)	0.40	5,316	2251	0271H1102251	28.360	85.558	Gandak	I(s)	0.43	5,376
2179	0271H1102179	28.495	85.549	Gandak	M(o)	1.59	4,859	2252	0271H1102252	28.358	85.538	Gandak	M(o)	10.83	4,390
2180	0271H1102180	28.494	85.616	Kosi	M(o)	2.22	5,648	2253	0271H1102253	28.356	85.581	Gandak	M(o)	5.47	5,163
2181	0271H1102181	28.490	85.537	Gandak	I(s)	0.25	4,710	2254	0271H1102254	28.353	85.574	Gandak	M(o)	0.25	5,218
2182	0271H1102182	28.490	85.538	Gandak	I(s)	0.27	4,712	2255	0271H1102255	28.352	85.618	Gandak	M(o)	4.85	5,120
2183	0271H1102183	28.485	85.736	Kosi	M(e)	51.99	5,335	2256	0271H1102256	28.348	85.614	Gandak	M(o)	0.65	5,088
2184	0271H1102184	28.483	85.612	Kosi	M(o)	0.98	5,572	2257	0271H1102257	28.342	85.699	Gandak	I(s)	0.35	5,215
2185	0271H1102185	28.482	85.609	Kosi	M(o)	0.34	5,623	2258	0271H1102258	28.333	85.642	Gandak	M(o)	0.51	5,401
2186	0271H1102186	28.479	85.730	Kosi	I(s)	0.83	5,385	2259	0271H1102259	28.330	85.694	Gandak	I(s)	0.77	5,108
2187	0271H1102187	28.479	85.643	Kosi	E(o)	1.38	5,638	2260	0271H1102260	28.329	85.688	Gandak	M(o)	0.29	5,139
2188	0271H1102188	28.477	85.691	Kosi	E(o)	1.05	5,875	2261	0271H1102261	28.328	85.685	Gandak	M(o)	3.19	5,252
2189	0271H1102189	28.477	85.563	Gandak	M(o)	0.43	5,296	2262	0271H1102262	28.328	85.695	Gandak	I(s)	0.39	5,072
2190	0271H1102190	28.468	85.519	Gandak	M(e)	43.67	4,445	2263	0271H1102263	28.323	85.692	Gandak	I(s)	1.77	5,026
2191	0271H1102191	28.467	85.572	Gandak	I(s)	0.25	5,134	2264	0271H1102264	28.321	85.687	Gandak	I(s)	0.46	5,075
2192	0271H1102192	28.464	85.685	Kosi	E(o)	0.33	5,713	2265	0271H1102265	28.320	85.631	Gandak	M(o)	6.07	5,324
2193	0271H1102193	28.461	85.693	Kosi	E(o)	4.86	5,703	2266	0271H1102266	28.315	85.688	Gandak	M(o)	0.73	5,113
2194	0271H1102194	28.460	85.684	Kosi	M(o)	18.49	5,705	2267	0271H1102267	28.311	85.708	Gandak	I(s)	0.65	4,928
2195	0271H1102195	28.460	85.585	Gandak	I(s)	0.40	5,193	2268	0271H1102268	28.310	85.633	Gandak	M(o)	6.07	5,214
2196	0271H1102196	28.459	85.582	Gandak	I(s)	6.03	5,160	2269	0271H1102269	28.310	85.694	Gandak	M(o)	0.33	5,240
2197	0271H1102197	28.458	85.699	Kosi	E(o)	0.69	5,671	2270	0271H1102270	28.309	85.710	Gandak	I(s)	0.40	4,916
2198	0271H1102198	28.457	85.699	Kosi	E(o)	0.36	5,674	2271	0271H1102271	28.308	85.706	Gandak	I(s)	0.43	4,916
2199	0271H1102199	28.456	85.534	Gandak	I(s)	0.44	4,734	2272	0271H1102272	28.297	85.694	Gandak	M(o)	0.86	5,185
2200	0271H1102200	28.449	85.555	Gandak	M(o)	0.31	5,308	2273	0271H1102273	28.295	85.618	Gandak	M(o)	0.42	5,206
2201	0271H1102201	28.448	85.557	Gandak	M(o)	1.78	5,246	2274	0271H1102274	28.294	85.591	Gandak	M(o)	0.43	5,176
2202	0271H1102202	28.446	85.562	Gandak	M(o)	2.09	5,180	2275	0271H1102275	28.294	85.693	Gandak	M(o)	0.63	5,184
2203	0271H1102203	28.445	85.560	Gandak	M(o)	1.78	5,203	2276	0271H1102276	28.293	85.746	Kosi	M(o)	0.31	5,599
2204	0271H1102204	28.437	85.572	Gandak	I(s)	3.42	4,961	2277	0271H1102277	28.291	85.715	Gandak	I(s)	0.79	4,826
2205	0271H1102205	28.435	85.535	Gandak	M(o)	0.88	5,256	2278	0271H1102278	28.291	85.618	Gandak	M(o)	0.60	5,047
2206	0271H1102206	28.433	85.535	Gandak	M(o)	1.65	5,239	2279	0271H1102279	28.287	85.602	Gandak	M(e)	2.41	5,026
2207	0271H1102207	28.432	85.532	Gandak	M(o)	5.72	5,250	2280	0271H1102280	28.287	85.716	Gandak	I(s)	1.86	4,808
2208	0271H1102208	28.431	85.569	Gandak	I(s)	0.55	4,889	2281	0271H1102281	28.287	85.714	Gandak	I(s)	0.40	4,824
2209	0271H1102209	28.426	85.564	Gandak	M(e)	29.39	4,873	2282	0271H1102282	28.284	85.715	Gandak	I(s)	1.05	4,806
2210	0271H1102210	28.426	85.539	Gandak	M(o)	1.13	5,161	2283	0271H1102283	28.283	85.720	Gandak	I(s)	0.95	4,809
2211	0271H1102211	28.423	85.530	Gandak	M(o)	0.72	5,289	2284	0271H1102284	28.283	85.719	Gandak	I(s)	0.68	4,802
2212	0271H1102212	28.422	85.559	Gandak	M(o)	0.66	4,863	2285	0271H1102285	28.282	85.702	Gandak	M(o)	6.14	5,053
2213	0271H1102213	28.420	85.557	Gandak	M(o)	0.27	4,866	2286	0271H1102286	28.280	85.747	Kosi	M(o)	0.38	5,350
2214	0271H1102214	28.420	85.532	Gandak	M(o)	3.00	5,224	2287	0271H1102287	28.278	85.720	Gandak	I(s)	1.25	4,779
2215	0271H1102215	28.419	85.560	Gandak	M(o)	0.69	4,848	2288	0271H1102288	28.276	85.722	Gandak	I(s)	0.53	4,773
2216	0271H1102216	28.418	85.559	Gandak	M(o)	1.02	4,872	2289	0271H1102289	28.272	85.723	Gandak	I(s)	0.47	4,760
2217	0271H1102217	28.417	85.522	Gandak	M(o)	8.91	5,207	2290	0271H1102290	28.269	85.725	Gandak	I(s)	0.68	4,727

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
2291	0271H1102291	28.267	85.680	Gandak	E(o)	0.28	5,216	2364	0271H1502364	28.395	85.810	Kosi	I(s)	0.42	5,764
2292	0271H1102292	28.263	85.697	Gandak	E(o)	0.27	5,279	2365	0271H1502365	28.393	85.836	Kosi	I(s)	0.28	5,597
2293	0271H1102293	28.262	85.675	Gandak	E(o)	0.76	5,102	2366	0271H1502366	28.393	85.821	Kosi	I(s)	0.35	5,706
2294	0271H1102294	28.261	85.681	Gandak	M(o)	0.35	5,148	2367	0271H1502367	28.393	85.857	Kosi	I(s)	0.75	5,445
2295	0271H1102295	28.259	85.696	Gandak	E(o)	0.51	5,285	2368	0271H1502368	28.392	85.834	Kosi	I(s)	0.27	5,609
2296	0271H1202296	28.245	85.715	Gandak	I(s)	1.80	4,641	2369	0271H1502369	28.392	85.823	Kosi	I(s)	0.26	5,689
2297	0271H1202297	28.242	85.704	Gandak	I(s)	0.28	4,601	2370	0271H1502370	28.392	85.838	Kosi	I(s)	0.48	5,590
2298	0271H1202298	28.241	85.708	Gandak	I(s)	0.59	4,598	2371	0271H1502371	28.391	85.838	Kosi	I(s)	0.71	5,575
2299	0271H1202299	28.236	85.639	Gandak	I(s)	0.30	4,593	2372	0271H1502372	28.391	85.841	Kosi	I(s)	0.68	5,565
2300	0271H1202300	28.236	85.611	Gandak	M(o)	0.64	5,170	2373	0271H1502373	28.390	85.852	Kosi	I(s)	0.26	5,477
2301	0271H1202301	28.235	85.700	Gandak	I(s)	0.32	4,533	2374	0271H1502374	28.390	85.885	Kosi	E(o)	1.34	5,412
2302	0271H1202302	28.233	85.611	Gandak	M(o)	2.93	5,083	2375	0271H1502375	28.389	85.856	Kosi	M(l)	3.75	5,407
2303	0271H1202303	28.231	85.617	Gandak	M(o)	0.34	5,196	2376	0271H1502376	28.388	85.858	Kosi	E(o)	0.78	5,406
2304	0271H1202304	28.230	85.645	Gandak	I(s)	0.37	4,506	2377	0271H1502377	28.388	85.873	Kosi	M(o)	1.31	5,514
2305	0271H1202305	28.229	85.621	Gandak	M(o)	0.29	5,195	2378	0271H1502378	28.385	85.863	Kosi	M(o)	1.32	5,500
2306	0271H1202306	28.219	85.562	Gandak	M(e)	4.48	3,985	2379	0271H1502379	28.384	85.794	Kosi	I(s)	0.71	6,055
2307	0271H1202307	28.189	85.723	Gandak	I(s)	0.28	4,764	2380	0271H1502380	28.382	85.792	Kosi	I(s)	0.67	5,939
2308	0271H1202308	28.188	85.749	Gandak	I(s)	0.26	4,969	2381	0271H1502381	28.381	85.865	Kosi	M(o)	0.41	5,542
2309	0271H1202309	28.186	85.744	Gandak	I(s)	0.42	4,936	2382	0271H1502382	28.380	85.870	Kosi	M(o)	0.56	5,537
2310	0271H1202310	28.183	85.704	Gandak	M(l)	0.44	4,725	2383	0271H1502383	28.380	85.865	Kosi	M(o)	0.25	5,552
2311	0271H1202311	28.180	85.695	Gandak	M(o)	0.66	4,828	2384	0271H1502384	28.380	85.866	Kosi	M(o)	0.33	5,543
2312	0271H1202312	28.179	85.698	Gandak	M(o)	5.74	4,748	2385	0271H1502385	28.375	85.896	Kosi	E(o)	0.26	5,244
2313	0271H1202313	28.178	85.694	Gandak	M(o)	0.26	4,850	2386	0271H1502386	28.375	85.888	Kosi	E(o)	0.50	5,269
2314	0271H1202314	28.173	85.512	Gandak	M(o)	0.68	5,078	2387	0271H1502387	28.371	85.890	Kosi	E(o)	27.07	5,242
2315	0271H1202315	28.173	85.524	Gandak	M(o)	0.57	4,965	2388	0271H1502388	28.369	85.890	Kosi	E(o)	1.58	5,242
2316	0271H1202316	28.171	85.601	Gandak	M(o)	0.81	5,037	2389	0271H1502389	28.368	85.893	Kosi	E(o)	1.72	5,246
2317	0271H1202317	28.168	85.520	Gandak	M(o)	0.33	5,143	2390	0271H1502390	28.366	85.911	Kosi	M(o)	0.72	5,078
2318	0271H1202318	28.163	85.630	Gandak	M(o)	13.05	4,986	2391	0271H1502391	28.360	85.871	Kosi	M(e)	463.78	5,212
2319	0271H1202319	28.159	85.748	Kosi	M(o)	0.81	4,961	2392	0271H1502392	28.360	85.902	Kosi	M(o)	1.24	5,182
2320	0271H1202320	28.154	85.739	Kosi	M(e)	0.70	4,777	2393	0271H1502393	28.357	85.914	Kosi	E(o)	0.75	5,185
2321	0271H1202321	28.153	85.741	Kosi	M(l)	0.33	4,739	2394	0271H1502394	28.354	85.910	Kosi	E(o)	1.59	5,196
2322	0271H1202322	28.140	85.526	Kosi	M(o)	0.43	5,003	2395	0271H1502395	28.347	85.859	Kosi	M(o)	0.31	5,660
2323	0271H1202323	28.136	85.557	Kosi	M(o)	0.50	4,869	2396	0271H1502396	28.344	85.861	Kosi	M(o)	0.39	5,443
2324	0271H1202324	28.118	85.625	Kosi	M(o)	2.10	4,889	2397	0271H1502397	28.343	85.849	Kosi	M(o)	0.31	5,263
2325	0271H1202325	28.114	85.635	Kosi	E(o)	1.38	4,784	2398	0271H1502398	28.341	85.879	Kosi	E(o)	1.61	5,178
2326	0271H1202326	28.113	85.729	Kosi	M(o)	0.33	4,248	2399	0271H1502399	28.338	85.879	Kosi	E(o)	1.26	5,172
2327	0271H1202327	28.106	85.536	Kosi	E(o)	0.65	4,310	2400	0271H1502400	28.338	85.871	Kosi	E(o)	1.09	5,183
2328	0271H1202328	28.105	85.620	Kosi	M(o)	1.46	4,800	2401	0271H1502401	28.333	85.913	Kosi	E(o)	2.38	5,325
2329	0271H1202329	28.103	85.614	Kosi	M(o)	1.32	4,591	2402	0271H1502402	28.329	85.869	Kosi	M(o)	213.52	5,167
2330	0271H1202330	28.082	85.507	Kosi	E(o)	0.87	4,456	2403	0271H1502403	28.323	85.908	Kosi	M(o)	14.56	5,387
2331	0271H1202331	28.042	85.717	Kosi	O	2.66	4,064	2404	0271H1502404	28.323	85.924	Kosi	M(o)	8.80	5,324
2332	0271H1202332	28.042	85.714	Kosi	O	0.25	4,050	2405	0271H1502405	28.322	85.838	Kosi	M(e)	540.35	5,067
2333	0271H1202333	28.041	85.715	Kosi	O	0.30	4,048	2406	0271H1502406	28.321	85.930	Kosi	M(o)	11.18	5,298
2334	0271H1202334	28.040	85.717	Kosi	O	0.87	4,052	2407	0271H1502407	28.320	85.909	Kosi	M(o)	0.28	5,467
2335	0271H1302335	28.947	85.784	Kosi	E(o)	0.74	5,648	2408	0271H1502408	28.320	85.935	Kosi	M(o)	0.29	5,357
2336	0271H1302336	28.931	85.773	Kosi	E(o)	1.29	5,597	2409	0271H1502409	28.320	85.903	Kosi	M(o)	5.20	5,436
2337	0271H1502337	28.486	85.949	Kosi	E(o)	0.36	5,244	2410	0271H1502410	28.317	85.930	Kosi	M(o)	0.41	5,377
2338	0271H1502338	28.483	85.856	Kosi	E(o)	0.74	5,612	2411	0271H1502411	28.316	85.951	Kosi	M(o)	6.03	5,230
2339	0271H1502339	28.475	85.826	Kosi	M(o)	0.78	5,737	2412	0271H1502412	28.315	85.761	Kosi	M(l)	0.30	5,564
2340	0271H1502340	28.474	85.828	Kosi	M(o)	0.66	5,732	2413	0271H1502413	28.315	85.985	Kosi	E(o)	0.25	5,075
2341	0271H1502341	28.473	85.825	Kosi	M(o)	0.32	5,750	2414	0271H1502414	28.314	85.965	Kosi	E(o)	5.60	5,124
2342	0271H1502342	28.468	85.848	Kosi	E(o)	1.61	5,705	2415	0271H1502415	28.314	85.771	Kosi	M(o)	1.95	5,612
2343	0271H1502343	28.468	85.790	Kosi	M(l)	0.32	5,522	2416	0271H1502416	28.313	85.948	Kosi	M(o)	25.06	5,227
2344	0271H1502344	28.467	85.788	Kosi	M(o)	0.64	5,511	2417	0271H1502417	28.311	85.775	Kosi	M(o)	0.83	5,603
2345	0271H1502345	28.464	85.819	Kosi	M(o)	1.14	5,853	2418	0271H1502418	28.310	85.771	Kosi	M(o)	1.75	5,595
2346	0271H1502346	28.452	85.783	Kosi	M(o)	0.33	5,552	2419	0271H1502419	28.309	85.871	Kosi	E(o)	1.79	5,281
2347	0271H1502347	28.450	85.783	Kosi	M(o)	0.54	5,568	2420	0271H1502420	28.309	85.768	Kosi	M(o)	0.41	5,595
2348	0271H1502348	28.446	85.794	Kosi	M(o)	1.64	5,796	2421	0271H1502421	28.309	85.770	Kosi	M(o)	0.71	5,596
2349	0271H1502349	28.442	85.780	Kosi	M(e)	48.25	5,577	2422	0271H1502422	28.308	85.773	Kosi	M(o)	0.57	5,616
2350	0271H1502350	28.441	85.751	Kosi	E(o)	0.37	5,865	2423	0271H1502423	28.308	85.759	Kosi	I(s)	1.06	5,489
2351	0271H1502351	28.435	85.770	Kosi	E(o)	0.60	5,788	2424	0271H1502424	28.307	85.768	Kosi	M(o)	0.65	5,574
2352	0271H1502352	28.431	85.821	Kosi	E(o)	0.37	5,726	2425	0271H1502425	28.305	85.767	Kosi	M(o)	1.95	5,574
2353	0271H1502353	28.426	85.779	Kosi	I(s)	0.91	5,645	2426	0271H1502426	28.303	85.902	Kosi	M(o)	0.93	5,441
2354	0271H1502354	28.413	85.856	Kosi	M(o)	3.63	5,581	2427	0271H1502427	28.302	85.875	Kosi	E(o)	1.44	5,273
2355	0271H1502355	28.403	85.883	Kosi	I(s)	0.65	5,332	2428	0271H1502428	28.297	85.819	Kosi	E(c)	28.10	5,080
2356	0271H1502356	28.399	85.864	Kosi	I(s)	0.86	5,432	2429	0271H1502429	28.294	85.868	Kosi	E(o)	0.30	5,213
2357	0271H1502357	28.399	85.867	Kosi	I(s)	1.27	5,425	2430	0271H1502430	28.293	85.830	Kosi	M(o)	28.50	5,023
2358	0271H1502358	28.399	85.872	Kosi	I(s)	0.26	5,412	2431	0271H1502431	28.289	85.787	Kosi	M(o)	0.66	5,448
2359	0271H1502359	28.399	85.871	Kosi	I(s)	0.36	5,418	2432	0271H1502432	28.289	85.871	Kosi	E(o)	0.34	5,191
2360	0271H1502360	28.398	85.866	Kosi	I(s)	0.75	5,422	2433	0271H1502433	28.288	85.894	Kosi	E(o)	1.00	5,245
2361	0271H1502361	28.397	85.814	Kosi	I(s)	0.35	5,744	2434	0271H1502434	28.287	85.784	Kosi	M(o)	6.18	5,426
2362	0271H1502362	28.397	85.863	Kosi	I(s)	0.25	5,430	2435	0271H1502435	28.287	85.927	Kosi	E(o)	3.94	5,143
2363	0271H1502363	28.396	85.814	Kosi	I(s)	0.40	5,741	2436	0271H1502436	28.286	85.827	Kosi	M(o)	7.15	5,043

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
2437	0271H1502437	28.286	85.929	Kosi	E(o)	0.25	5,144	2510	0271H1602510	28.113	85.767	Kosi	E(o)	0.26	4,719
2438	0271H1502438	28.285	85.930	Kosi	E(o)	0.66	5,141	2511	0271H1602511	28.079	85.815	Kosi	E(o)	3.62	4,262
2439	0271H1502439	28.285	85.839	Kosi	M(o)	6.50	4,973	2512	0271H1602512	28.073	85.854	Kosi	E(o)	0.46	4,452
2440	0271H1502440	28.284	85.972	Kosi	M(o)	0.98	5,251	2513	0271H1602513	28.071	85.802	Kosi	E(o)	0.65	4,348
2441	0271H1502441	28.281	85.934	Kosi	E(o)	1.04	5,123	2514	0271H1602514	28.066	85.944	Kosi	E(o)	5.68	4,529
2442	0271H1502442	28.281	85.760	Kosi	I(s)	0.62	5,249	2515	0271H1602515	28.062	85.814	Kosi	E(o)	1.26	4,346
2443	0271H1502443	28.281	85.757	Kosi	I(s)	1.06	5,229	2516	0271H1602516	28.061	85.936	Kosi	E(o)	1.58	4,643
2444	0271H1502444	28.279	85.751	Kosi	M(o)	3.52	5,313	2517	0271H1602517	28.061	85.838	Kosi	E(o)	2.92	4,630
2445	0271H1502445	28.277	85.870	Kosi	E(o)	1.24	5,196	2518	0271H1602518	28.055	85.828	Kosi	E(o)	0.91	4,521
2446	0271H1502446	28.277	85.926	Kosi	E(o)	1.06	5,278	2519	0271H1602519	28.054	85.828	Kosi	E(o)	0.37	4,528
2447	0271H1502447	28.276	85.840	Kosi	O	1.60	4,966	2520	0271H1602520	28.053	85.837	Kosi	E(o)	3.02	4,383
2448	0271H1502448	28.275	85.802	Kosi	M(o)	0.88	5,457	2521	0271H1602521	28.051	85.825	Kosi	E(o)	7.29	4,253
2449	0271H1502449	28.275	85.798	Kosi	M(o)	1.92	5,379	2522	0271H1602522	28.049	85.848	Kosi	E(o)	1.17	4,258
2450	0271H1502450	28.272	85.931	Kosi	E(o)	4.37	5,302	2523	0271H1602523	28.047	85.839	Kosi	E(o)	0.39	4,493
2451	0271H1502451	28.271	85.783	Kosi	M(e)	7.46	5,321	2524	0271H1602524	28.046	85.927	Kosi	M(o)	0.56	4,661
2452	0271H1502452	28.270	85.761	Kosi	I(s)	0.47	5,221	2525	0271H1602525	28.045	85.840	Kosi	E(o)	2.46	4,479
2453	0271H1502453	28.270	85.806	Kosi	M(o)	1.46	5,387	2526	0271H1602526	28.037	85.944	Kosi	O	0.39	4,198
2454	0271H1502454	28.268	85.897	Kosi	E(o)	4.04	5,252	2527	0271H1602527	28.034	85.879	Kosi	E(o)	2.13	4,253
2455	0271H1502455	28.267	85.872	Kosi	E(o)	0.97	5,295	2528	0271H1602528	28.032	85.882	Kosi	E(o)	0.74	4,270
2456	0271H1502456	28.265	85.797	Kosi	E(o)	4.12	5,273	2529	0271H1602529	28.032	85.944	Kosi	O	0.88	4,370
2457	0271H1502457	28.264	85.760	Kosi	I(s)	0.61	5,211	2530	0271H1602530	28.027	85.891	Kosi	E(o)	0.51	4,418
2458	0271H1502458	28.264	85.770	Kosi	I(s)	0.34	5,152	2531	0271H1602531	28.021	85.885	Kosi	E(o)	0.53	4,404
2459	0271H1502459	28.261	85.878	Kosi	E(o)	2.62	5,213	2532	0271H1602532	28.020	85.869	Kosi	E(o)	1.23	4,201
2460	0271H1502460	28.261	85.915	Kosi	O	15.97	5,106	2533	0271H1602533	28.017	85.869	Kosi	E(o)	1.96	4,198
2461	0271H1502461	28.259	85.781	Kosi	I(s)	0.71	5,045	2534	0271H1602534	28.007	85.866	Kosi	E(o)	1.41	4,001
2462	0271H1502462	28.259	85.837	Kosi	E(o)	1.88	4,976	2535	0271K0802535	29.126	86.370	Kosi	E(o)	1.03	5,463
2463	0271H1502463	28.258	85.782	Kosi	I(s)	0.55	5,038	2536	0271K0802536	29.116	86.352	Kosi	E(o)	1.53	5,322
2464	0271H1502464	28.258	85.918	Kosi	O	1.51	5,107	2537	0271K0802537	29.112	86.410	Kosi	E(o)	0.50	5,403
2465	0271H1502465	28.257	85.784	Kosi	I(s)	2.30	5,028	2538	0271K0802538	29.104	86.379	Kosi	E(o)	0.35	5,280
2466	0271H1502466	28.255	85.917	Kosi	O	3.92	5,106	2539	0271K0802539	29.090	86.421	Kosi	E(o)	4.36	5,287
2467	0271H1502467	28.254	85.788	Kosi	I(s)	1.40	5,019	2540	0271K0802540	29.079	86.422	Kosi	E(o)	1.95	5,231
2468	0271H1502468	28.253	85.790	Kosi	I(s)	0.68	5,009	2541	0271L0102541	28.960	86.066	Kosi	E(o)	0.63	5,655
2469	0271H1502469	28.248	85.943	Kosi	E(o)	0.30	5,291	2542	0271L0102542	28.953	86.075	Kosi	E(o)	1.90	5,443
2470	0271H1602470	28.247	85.883	Kosi	E(o)	1.04	5,122	2543	0271L0102543	28.940	86.075	Kosi	E(o)	1.73	5,589
2471	0271H1602471	28.245	85.826	Kosi	M(o)	0.42	5,068	2544	0271L0102544	28.938	86.074	Kosi	E(o)	0.38	5,602
2472	0271H1602472	28.244	85.817	Kosi	E(o)	3.29	5,089	2545	0271L0102545	28.936	86.064	Kosi	E(o)	0.75	5,584
2473	0271H1602473	28.242	85.922	Kosi	E(o)	0.97	5,175	2546	0271L0102546	28.899	86.011	Kosi	E(o)	1.76	5,628
2474	0271H1602474	28.242	85.774	Kosi	I(s)	0.42	5,096	2547	0271L0102547	28.898	85.982	Kosi	E(o)	1.14	5,499
2475	0271H1602475	28.241	85.766	Kosi	I(s)	1.41	5,143	2548	0271L0302548	28.364	86.249	Kosi	M(o)	0.49	5,679
2476	0271H1602476	28.241	85.768	Kosi	I(s)	0.26	5,124	2549	0271L0302549	28.351	86.179	Kosi	M(o)	1.94	5,365
2477	0271H1602477	28.241	85.830	Kosi	E(o)	0.76	5,002	2550	0271L0302550	28.349	86.182	Kosi	M(o)	1.63	5,365
2478	0271H1602478	28.240	85.880	Kosi	M(o)	1.47	5,193	2551	0271L0302551	28.347	86.225	Kosi	M(e)	55.90	5,348
2479	0271H1602479	28.240	85.778	Kosi	I(s)	4.41	5,085	2552	0271L0302552	28.345	86.185	Kosi	M(o)	0.60	5,415
2480	0271H1602480	28.239	85.773	Kosi	I(s)	0.32	5,107	2553	0271L0302553	28.341	86.187	Kosi	M(o)	0.25	5,433
2481	0271H1602481	28.239	85.818	Kosi	E(o)	4.05	5,032	2554	0271L0302554	28.340	86.191	Kosi	M(o)	0.43	5,430
2482	0271H1602482	28.238	85.831	Kosi	E(o)	0.58	4,999	2555	0271L0302555	28.335	86.192	Kosi	M(e)	55.00	5,422
2483	0271H1602483	28.237	85.775	Kosi	I(s)	0.68	5,091	2556	0271L0302556	28.321	86.158	Kosi	M(o)	22.44	5,549
2484	0271H1602484	28.235	85.778	Kosi	I(s)	0.48	5,083	2557	0271L0302557	28.303	86.157	Kosi	M(e)	59.05	5,307
2485	0271H1602485	28.235	85.922	Kosi	E(o)	1.14	5,316	2558	0271L0302558	28.301	86.153	Kosi	E(o)	0.27	5,393
2486	0271H1602486	28.235	85.776	Kosi	I(s)	0.26	5,093	2559	0271L0302559	28.295	86.164	Kosi	M(o)	0.34	5,372
2487	0271H1602487	28.226	85.801	Kosi	M(o)	0.25	4,841	2560	0271L0302560	28.295	86.151	Kosi	M(e)	16.51	5,346
2488	0271H1602488	28.226	85.800	Kosi	M(o)	0.25	4,847	2561	0271L0302561	28.294	86.131	Kosi	M(e)	23.99	5,244
2489	0271H1602489	28.224	85.804	Kosi	M(o)	4.64	4,745	2562	0271L0302562	28.292	86.158	Kosi	M(o)	0.69	5,410
2490	0271H1602490	28.223	85.808	Kosi	I(s)	0.44	4,784	2563	0271L0302563	28.288	86.128	Kosi	M(o)	0.25	5,300
2491	0271H1602491	28.221	85.808	Kosi	I(s)	0.39	4,794	2564	0271L0302564	28.286	86.132	Kosi	M(o)	0.34	5,275
2492	0271H1602492	28.220	85.812	Kosi	I(s)	0.42	4,786	2565	0271L0302565	28.278	86.236	Kosi	M(o)	1.94	5,424
2493	0271H1602493	28.211	85.847	Kosi	M(e)	61.34	4,374	2566	0271L0302566	28.276	86.178	Kosi	M(o)	0.78	5,436
2494	0271H1602494	28.194	85.871	Kosi	M(o)	7.38	4,617	2567	0271L0302567	28.274	86.215	Kosi	M(o)	0.37	5,422
2495	0271H1602495	28.193	85.879	Kosi	E(o)	3.52	4,623	2568	0271L0302568	28.273	86.156	Kosi	M(o)	2.86	5,417
2496	0271H1602496	28.182	85.923	Kosi	E(o)	47.08	4,355	2569	0271L0302569	28.273	86.103	Kosi	M(o)	1.25	5,463
2497	0271H1602497	28.171	85.891	Kosi	M(e)	0.78	4,425	2570	0271L0302570	28.272	86.180	Kosi	M(o)	6.71	5,404
2498	0271H1602498	28.169	85.890	Kosi	I(s)	0.94	4,452	2571	0271L0302571	28.272	86.121	Kosi	E(o)	0.25	5,665
2499	0271H1602499	28.168	85.866	Kosi	M(o)	3.90	4,686	2572	0271L0302572	28.270	86.170	Kosi	M(o)	0.61	5,532
2500	0271H1602500	28.155	85.911	Kosi	M(e)	7.95	4,486	2573	0271L0302573	28.270	86.127	Kosi	M(e)	1.75	5,548
2501	0271H1602501	28.151	85.905	Kosi	I(s)	12.60	4,495	2574	0271L0302574	28.270	86.187	Kosi	M(e)	12.64	5,335
2502	0271H1602502	28.139	85.827	Kosi	M(o)	2.29	4,763	2575	0271L0302575	28.269	86.127	Kosi	M(o)	1.91	5,552
2503	0271H1602503	28.139	85.919	Kosi	M(o)	10.15	4,865	2576	0271L0302576	28.268	86.197	Kosi	M(o)	0.93	5,454
2504	0271H1602504	28.137	85.901	Kosi	M(o)	0.36	4,806	2577	0271L0302577	28.267	86.130	Kosi	M(o)	1.24	5,525
2505	0271H1602505	28.137	85.788	Kosi	M(po)	2.54	4,574	2578	0271L0302578	28.266	86.217	Kosi	M(po)	2.97	5,410
2506	0271H1602506	28.133	85.897	Kosi	M(o)	0.65	4,849	2579	0271L0302579	28.265	86.222	Kosi	M(o)	1.45	5,374
2507	0271H1602507	28.129	85.837	Kosi	M(o)	1.85	4,485	2580	0271L0302580	28.262	86.217	Kosi	M(o)	1.98	5,395
2508	0271H1602508	28.128	85.898	Kosi	M(o)	0.34	4,885	2581	0271L0302581	28.262	86.213	Kosi	M(o)	0.42	5,541
2509	0271H1602509	28.119	85.769	Kosi	E(o)	0.49	4,764	2582	0271L0302582	28.260	86.211	Kosi	M(o)	0.35	5,534

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
2583	0271L0302583	28.260	86.219	Kosi	M(o)	0.27	5,423	2656	0271L0402656	28.193	86.245	Kosi	M(o)	0.91	5,363
2584	0271L0302584	28.260	86.213	Kosi	M(o)	1.93	5,501	2657	0271L0402657	28.193	86.160	Kosi	E(o)	0.82	4,910
2585	0271L0302585	28.260	86.250	Kosi	M(o)	0.39	5,549	2658	0271L0402658	28.190	86.134	Kosi	M(o)	1.10	5,215
2586	0271L0302586	28.259	86.234	Kosi	I(s)	0.36	5,174	2659	0271L0402659	28.189	86.133	Kosi	M(o)	0.51	5,219
2587	0271L0302587	28.259	86.102	Kosi	E(o)	1.03	5,216	2660	0271L0402660	28.188	86.249	Kosi	M(o)	1.54	5,283
2588	0271L0302588	28.257	86.151	Kosi	M(o)	2.22	5,359	2661	0271L0402661	28.187	86.090	Kosi	M(o)	0.40	5,330
2589	0271L0302589	28.257	86.247	Kosi	M(o)	0.49	5,625	2662	0271L0402662	28.185	86.129	Kosi	M(o)	0.68	5,122
2590	0271L0302590	28.256	86.231	Kosi	I(s)	0.67	5,167	2663	0271L0402663	28.185	86.247	Kosi	M(o)	0.61	5,266
2591	0271L0302591	28.255	86.147	Kosi	M(o)	3.41	5,380	2664	0271L0402664	28.185	86.186	Kosi	M(o)	3.26	5,238
2592	0271L0302592	28.255	86.216	Kosi	M(o)	1.36	5,470	2665	0271L0402665	28.183	86.226	Kosi	M(o)	12.34	5,223
2593	0271L0302593	28.254	86.223	Kosi	M(o)	0.85	5,378	2666	0271L0402666	28.181	86.249	Kosi	M(o)	4.42	5,244
2594	0271L0302594	28.254	86.141	Kosi	M(o)	5.36	5,394	2667	0271L0402667	28.179	86.073	Kosi	E(o)	0.83	5,168
2595	0271L0302595	28.254	86.117	Kosi	M(o)	1.07	5,304	2668	0271L0402668	28.178	86.170	Kosi	M(o)	0.72	5,092
2596	0271L0302596	28.253	86.103	Kosi	M(e)	14.98	5,189	2669	0271L0402669	28.178	86.195	Kosi	M(o)	0.59	5,220
2597	0271L0302597	28.253	86.115	Kosi	M(o)	0.49	5,295	2670	0271L0402670	28.176	86.095	Kosi	E(o)	2.58	5,065
2598	0271L0302598	28.253	86.236	Kosi	I(s)	0.42	5,141	2671	0271L0402671	28.170	86.060	Kosi	M(o)	4.43	5,169
2599	0271L0302599	28.252	86.218	Kosi	M(o)	9.08	5,438	2672	0271L0402672	28.169	86.180	Kosi	M(o)	1.07	5,383
2600	0271L0402600	28.249	86.150	Kosi	M(o)	13.16	5,331	2673	0271L0402673	28.166	86.184	Kosi	M(o)	0.52	5,292
2601	0271L0402601	28.247	86.235	Kosi	I(s)	0.42	5,116	2674	0271L0402674	28.163	86.067	Kosi	M(e)	1.64	5,160
2602	0271L0402602	28.247	86.088	Kosi	M(o)	1.52	5,593	2675	0271L0402675	28.160	86.076	Kosi	M(o)	1.31	5,237
2603	0271L0402603	28.244	86.126	Kosi	E(o)	0.31	5,446	2676	0271L0402676	28.156	86.110	Kosi	M(o)	0.41	5,170
2604	0271L0402604	28.244	86.227	Kosi	M(e)	2.91	5,281	2677	0271L0402677	28.139	86.098	Kosi	M(o)	0.69	5,345
2605	0271L0402605	28.243	86.157	Kosi	M(o)	2.84	5,531	2678	0271L0402678	28.136	86.096	Kosi	M(o)	2.59	5,307
2606	0271L0402606	28.243	86.196	Kosi	M(e)	17.69	5,338	2679	0271L0402679	28.135	86.169	Kosi	E(o)	0.93	4,894
2607	0271L0402607	28.241	86.112	Kosi	M(o)	0.57	5,518	2680	0271L0402680	28.135	86.100	Kosi	M(o)	0.80	5,245
2608	0271L0402608	28.241	86.128	Kosi	M(o)	0.76	5,401	2681	0271L0402681	28.132	86.098	Kosi	M(o)	0.86	5,270
2609	0271L0402609	28.240	86.222	Kosi	M(o)	0.67	5,453	2682	0271L0402682	28.131	86.096	Kosi	M(o)	0.28	5,354
2610	0271L0402610	28.239	86.158	Kosi	M(o)	1.05	5,460	2683	0271L0402683	28.127	86.083	Kosi	M(o)	0.76	5,336
2611	0271L0402611	28.239	86.242	Kosi	I(s)	2.12	5,070	2684	0271L0402684	28.126	86.105	Kosi	M(o)	5.75	5,195
2612	0271L0402612	28.238	86.195	Kosi	M(o)	0.53	5,501	2685	0271L0402685	28.125	86.051	Kosi	E(o)	2.04	4,587
2613	0271L0402613	28.238	86.113	Kosi	M(o)	0.33	5,444	2686	0271L0402686	28.124	86.116	Kosi	M(o)	0.25	5,154
2614	0271L0402614	28.237	86.112	Kosi	M(o)	0.40	5,474	2687	0271L0402687	28.123	86.125	Kosi	M(o)	0.51	5,137
2615	0271L0402615	28.237	86.227	Kosi	M(o)	1.22	5,425	2688	0271L0402688	28.120	86.096	Kosi	M(o)	0.49	5,288
2616	0271L0402616	28.236	86.115	Kosi	M(o)	0.53	5,419	2689	0271L0402689	28.118	86.116	Kosi	M(o)	0.37	5,087
2617	0271L0402617	28.235	86.111	Kosi	M(o)	0.62	5,535	2690	0271L0402690	28.118	86.119	Kosi	M(o)	5.81	5,024
2618	0271L0402618	28.233	86.116	Kosi	M(o)	0.28	5,420	2691	0271L0402691	28.117	86.115	Kosi	M(o)	0.81	5,095
2619	0271L0402619	28.233	86.156	Kosi	M(o)	1.22	5,444	2692	0271L0402692	28.114	86.116	Kosi	M(o)	0.43	5,123
2620	0271L0402620	28.231	86.148	Kosi	M(o)	1.80	5,450	2693	0271L0402693	28.096	86.195	Kosi	M(o)	1.62	4,875
2621	0271L0402621	28.231	86.118	Kosi	M(o)	0.29	5,411	2694	0271L0402694	28.095	86.193	Kosi	M(o)	6.83	4,879
2622	0271L0402622	28.230	86.146	Kosi	M(o)	1.72	5,450	2695	0271L0402695	28.090	86.238	Kosi	M(o)	2.78	5,161
2623	0271L0402623	28.229	86.222	Kosi	M(o)	0.25	5,491	2696	0271L0402696	28.088	86.195	Kosi	M(o)	0.45	5,038
2624	0271L0402624	28.228	86.220	Kosi	M(o)	4.19	5,508	2697	0271L0402697	28.087	86.196	Kosi	M(o)	0.32	5,036
2625	0271L0402625	28.228	86.225	Kosi	E(o)	0.29	5,443	2698	0271L0402698	28.079	86.250	Kosi	M(o)	1.93	4,883
2626	0271L0402626	28.228	86.204	Kosi	M(o)	5.14	5,446	2699	0271L0402699	28.070	86.057	Kosi	M(o)	0.29	4,638
2627	0271L0402627	28.225	86.227	Kosi	E(o)	0.31	5,397	2700	0271L0402700	28.069	86.059	Kosi	M(o)	0.29	4,644
2628	0271L0402628	28.225	86.149	Kosi	M(o)	0.85	5,404	2701	0271L0402701	28.069	86.027	Kosi	E(o)	3.78	4,493
2629	0271L0402629	28.224	86.206	Kosi	M(o)	4.42	5,395	2702	0271L0402702	28.067	86.066	Kosi	M(o)	32.50	4,630
2630	0271L0402630	28.223	86.235	Kosi	E(o)	0.32	5,245	2703	0271L0402703	28.065	86.024	Kosi	E(o)	0.31	4,561
2631	0271L0402631	28.221	86.086	Kosi	M(o)	8.58	5,170	2704	0271L0402704	28.056	86.207	Kosi	M(o)	0.52	5,210
2632	0271L0402632	28.216	86.235	Kosi	M(o)	0.35	5,328	2705	0271L0402705	28.047	86.036	Kosi	M(o)	0.64	4,803
2633	0271L0402633	28.215	86.164	Kosi	M(o)	0.78	5,484	2706	0271L0402706	28.037	86.073	Kosi	M(o)	0.67	4,894
2634	0271L0402634	28.214	86.071	Kosi	M(o)	0.36	5,201	2707	0271L0402707	28.036	86.077	Kosi	M(o)	0.52	4,988
2635	0271L0402635	28.213	86.095	Kosi	E(o)	0.29	5,394	2708	0271L0402708	28.032	86.073	Kosi	M(o)	2.32	5,005
2636	0271L0402636	28.213	86.227	Kosi	M(o)	0.64	5,436	2709	0271L0402709	28.024	86.094	Kosi	E(o)	0.62	4,963
2637	0271L0402637	28.211	86.213	Kosi	M(o)	5.96	5,380	2710	0271L0402710	28.023	86.099	Kosi	M(o)	1.47	4,945
2638	0271L0402638	28.210	86.164	Kosi	E(o)	0.30	5,440	2711	0271L0402711	28.015	86.049	Kosi	E(o)	0.92	4,627
2639	0271L0402639	28.209	86.058	Kosi	E(o)	3.34	4,977	2712	0271L0402712	28.015	86.036	Kosi	E(o)	0.74	4,271
2640	0271L0402640	28.208	86.078	Kosi	E(o)	0.58	5,338	2713	0271L0402713	28.009	86.035	Kosi	E(o)	1.91	4,434
2641	0271L0402641	28.208	86.086	Kosi	E(o)	0.80	5,232	2714	0271L0402714	28.002	86.037	Kosi	E(o)	0.36	4,579
2642	0271L0402642	28.207	86.217	Kosi	M(o)	0.53	5,454	2715	0271L0402715	28.002	86.078	Kosi	M(o)	0.81	4,731
2643	0271L0402643	28.207	86.227	Kosi	I(s)	0.51	5,663	2716	0271L0502716	28.789	86.497	Kosi	E(o)	2.43	5,479
2644	0271L0402644	28.206	86.239	Kosi	M(o)	1.51	5,453	2717	0271L0602717	28.712	87.481	Kosi	E(o)	5.85	5,239
2645	0271L0402645	28.203	86.078	Kosi	E(o)	0.31	5,282	2718	0271L0602718	28.693	87.387	Kosi	E(o)	1.07	5,376
2646	0271L0402646	28.202	86.241	Kosi	M(o)	0.59	5,365	2719	0271L0602719	28.688	87.415	Kosi	E(o)	0.41	5,504
2647	0271L0402647	28.202	86.221	Kosi	M(o)	0.47	5,516	2720	0271L0602720	28.680	87.377	Kosi	E(o)	8.67	5,197
2648	0271L0402648	28.201	86.163	Kosi	M(o)	2.61	5,101	2721	0271L0602721	28.676	87.491	Kosi	O	0.62	4,900
2649	0271L0402649	28.201	86.240	Kosi	M(o)	1.67	5,364	2722	0271L0702722	28.424	86.308	Kosi	E(o)	0.59	5,711
2650	0271L0402650	28.200	86.219	Kosi	M(o)	0.65	5,473	2723	0271L0702723	28.402	86.382	Kosi	M(o)	0.25	5,507
2651	0271L0402651	28.199	86.223	Kosi	M(l)	0.42	5,413	2724	0271L0702724	28.401	86.386	Kosi	M(o)p	0.27	5,501
2652	0271L0402652	28.197	86.183	Kosi	M(o)	1.69	5,200	2725	0271L0702725	28.401	86.384	Kosi	M(o)	0.32	5,507
2653	0271L0402653	28.196	86.071	Kosi	E(o)	0.32	5,685	2726	0271L0702726	28.398	86.487	Kosi	M(o)	1.14	5,625
2654	0271L0402654	28.196	86.133	Kosi	M(o)	3.26	5,340	2727	0271L0702727	28.397	86.440	Kosi	M(o)	1.69	5,539
2655	0271L0402655	28.194	86.220	Kosi	M(o)	4.69	5,234	2728	0271L0702728	28.397	86.321	Kosi	M(o)	2.07	5,351

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
2729	0271L0702729	28.394	86.482	Kosi	M(o)	0.36	5,626	2802	0271L0802802	28.244	86.395	Kosi	I(s)	0.86	5,217
2730	0271L0702730	28.393	86.451	Kosi	M(e)	5.24	5,624	2803	0271L0802803	28.244	86.436	Kosi	M(o)	0.61	5,509
2731	0271L0702731	28.392	86.440	Kosi	M(e)	4.92	5,557	2804	0271L0802804	28.243	86.291	Kosi	I(s)	1.11	4,940
2732	0271L0702732	28.392	86.415	Kosi	M(e)	20.17	5,502	2805	0271L0802805	28.240	86.291	Kosi	I(s)	0.38	4,931
2733	0271L0702733	28.392	86.276	Kosi	E(o)	0.72	5,874	2806	0271L0802806	28.240	86.365	Kosi	M(e)	24.72	5,327
2734	0271L0702734	28.381	86.384	Kosi	M(e)	13.92	5,551	2807	0271L0802807	28.238	86.395	Kosi	I(s)	0.86	5,183
2735	0271L0702735	28.378	86.488	Kosi	M(o)	1.99	5,730	2808	0271L0802808	28.238	86.371	Kosi	M(o)	3.04	5,324
2736	0271L0702736	28.374	86.305	Kosi	M(e)	391.50	5,346	2809	0271L0802809	28.237	86.339	Kosi	M(o)	0.52	5,572
2737	0271L0702737	28.374	86.259	Kosi	M(e)	27.54	5,544	2810	0271L0802810	28.236	86.393	Kosi	I(s)	0.49	5,171
2738	0271L0702738	28.370	86.412	Kosi	M(o)	0.97	5,800	2811	0271L0802811	28.236	86.356	Kosi	M(o)	8.56	5,399
2739	0271L0702739	28.366	86.482	Kosi	E(o)	1.46	5,795	2812	0271L0802812	28.235	86.288	Kosi	I(s)	0.72	4,902
2740	0271L0702740	28.365	86.491	Kosi	M(o)	0.65	5,621	2813	0271L0802813	28.233	86.331	Kosi	M(o)	3.07	5,359
2741	0271L0702741	28.363	86.487	Kosi	M(e)	4.97	5,615	2814	0271L0802814	28.232	86.412	Kosi	M(e)	8.60	5,363
2742	0271L0702742	28.359	86.479	Kosi	M(o)	0.64	5,772	2815	0271L0802815	28.232	86.323	Kosi	M(o)	0.90	5,289
2743	0271L0702743	28.358	86.475	Kosi	E(o)	0.90	5,859	2816	0271L0802816	28.231	86.433	Kosi	M(o)	0.81	5,497
2744	0271L0702744	28.356	86.260	Kosi	M(o)	2.62	5,893	2817	0271L0802817	28.231	86.316	Kosi	M(o)	0.66	5,255
2745	0271L0702745	28.348	86.493	Kosi	M(e)	34.51	5,524	2818	0271L0802818	28.231	86.315	Kosi	M(o)	0.25	5,251
2746	0271L0702746	28.331	86.250	Kosi	M(o)	0.43	5,747	2819	0271L0802819	28.230	86.436	Kosi	M(o)	3.50	5,465
2747	0271L0702747	28.320	86.467	Kosi	M(l)	0.59	5,655	2820	0271L0802820	28.230	86.313	Kosi	M(o)	0.33	5,239
2748	0271L0702748	28.318	86.479	Kosi	M(o)	0.34	5,551	2821	0271L0802821	28.230	86.312	Kosi	M(o)	0.86	5,233
2749	0271L0702749	28.314	86.509	Kosi	M(o)	0.82	5,411	2822	0271L0802822	28.229	86.320	Kosi	M(o)	8.20	5,272
2750	0271L0702750	28.286	86.514	Kosi	I(s)	4.71	5,158	2823	0271L0802823	28.228	86.391	Kosi	I(s)	1.53	5,107
2751	0271L0702751	28.285	86.496	Kosi	M(o)	0.90	5,178	2824	0271L0802824	28.227	86.420	Kosi	M(o)	2.40	5,414
2752	0271L0702752	28.285	86.494	Kosi	M(o)	0.84	5,162	2825	0271L0802825	28.226	86.391	Kosi	I(s)	0.56	5,092
2753	0271L0702753	28.284	86.487	Kosi	I(s)	1.78	5,210	2826	0271L0802826	28.224	86.431	Kosi	E(o)	0.25	5,540
2754	0271L0702754	28.284	86.266	Kosi	M(o)	2.29	5,439	2827	0271L0802827	28.224	86.394	Kosi	I(s)	1.66	5,083
2755	0271L0702755	28.283	86.313	Kosi	M(o)	1.76	5,399	2828	0271L0802828	28.223	86.453	Kosi	E(o)	0.34	5,258
2756	0271L0702756	28.281	86.289	Kosi	M(o)	0.72	5,438	2829	0271L0802829	28.221	86.394	Kosi	I(s)	0.26	5,069
2757	0271L0702757	28.279	86.295	Kosi	M(o)	0.81	5,372	2830	0271L0802830	28.220	86.283	Kosi	M(o)	0.25	4,840
2758	0271L0702758	28.276	86.310	Kosi	I(s)	0.44	5,191	2831	0271L0802831	28.220	86.441	Kosi	M(o)	0.39	5,374
2759	0271L0702759	28.276	86.296	Kosi	E(o)	0.45	5,402	2832	0271L0802832	28.219	86.437	Kosi	M(o)	0.59	5,412
2760	0271L0702760	28.276	86.379	Kosi	I(s)	0.25	5,434	2833	0271L0802833	28.219	86.303	Kosi	M(o)	0.78	5,257
2761	0271L0702761	28.275	86.304	Kosi	I(s)	0.43	5,191	2834	0271L0802834	28.218	86.280	Kosi	M(o)	5.44	4,828
2762	0271L0702762	28.273	86.385	Kosi	I(s)	0.45	5,405	2835	0271L0802835	28.217	86.302	Kosi	M(o)	1.32	5,277
2763	0271L0702763	28.271	86.323	Kosi	M(o)	0.67	5,318	2836	0271L0802836	28.217	86.305	Kosi	M(o)	1.86	5,264
2764	0271L0702764	28.270	86.387	Kosi	I(s)	0.30	5,396	2837	0271L0802837	28.216	86.396	Kosi	I(s)	0.96	5,034
2765	0271L0702765	28.270	86.388	Kosi	I(s)	0.26	5,381	2838	0271L0802838	28.216	86.414	Kosi	E(o)	0.70	5,312
2766	0271L0702766	28.269	86.408	Kosi	E(o)	1.57	5,454	2839	0271L0802839	28.216	86.359	Kosi	M(o)	0.65	5,620
2767	0271L0702767	28.269	86.384	Kosi	I(s)	0.38	5,385	2840	0271L0802840	28.215	86.276	Kosi	M(o)	0.28	4,819
2768	0271L0702768	28.267	86.315	Kosi	E(o)	0.31	5,350	2841	0271L0802841	28.214	86.277	Kosi	M(o)	0.45	4,819
2769	0271L0702769	28.266	86.384	Kosi	I(s)	0.59	5,379	2842	0271L0802842	28.214	86.275	Kosi	M(o)	0.48	4,815
2770	0271L0702770	28.266	86.387	Kosi	I(s)	0.26	5,368	2843	0271L0802843	28.213	86.274	Kosi	M(o)	0.46	4,804
2771	0271L0702771	28.265	86.413	Kosi	M(o)	1.14	5,448	2844	0271L0802844	28.211	86.273	Kosi	M(o)	0.42	4,801
2772	0271L0702772	28.265	86.389	Kosi	I(s)	0.35	5,368	2845	0271L0802845	28.210	86.426	Kosi	E(o)	0.95	5,285
2773	0271L0702773	28.264	86.379	Kosi	I(s)	0.62	5,371	2846	0271L0802846	28.210	86.272	Kosi	M(o)	0.34	4,795
2774	0271L0702774	28.264	86.296	Kosi	I(s)	0.25	5,069	2847	0271L0802847	28.208	86.402	Kosi	M(o)	0.28	4,993
2775	0271L0702775	28.264	86.463	Kosi	O	0.25	5,341	2848	0271L0802848	28.203	86.298	Kosi	M(o)	0.26	5,528
2776	0271L0702776	28.263	86.410	Kosi	E(o)	0.36	5,448	2849	0271L0802849	28.203	86.250	Kosi	M(o)	0.37	5,171
2777	0271L0702777	28.262	86.385	Kosi	I(s)	1.32	5,358	2850	0271L0802850	28.202	86.309	Kosi	M(e)	6.57	5,430
2778	0271L0702778	28.262	86.262	Kosi	M(o)	8.72	5,350	2851	0271L0802851	28.200	86.361	Kosi	M(o)	0.27	5,563
2779	0271L0702779	28.258	86.393	Kosi	I(s)	0.42	5,314	2852	0271L0802852	28.199	86.357	Kosi	M(o)	0.63	5,541
2780	0271L0702780	28.257	86.293	Kosi	I(s)	0.46	5,045	2853	0271L0802853	28.194	86.343	Kosi	M(o)	0.94	5,421
2781	0271L0702781	28.256	86.311	Kosi	I(s)	0.65	5,623	2854	0271L0802854	28.194	86.314	Kosi	M(e)	27.79	5,245
2782	0271L0702782	28.255	86.382	Kosi	M(o)	0.66	5,370	2855	0271L0802855	28.193	86.361	Kosi	M(e)	3.22	5,463
2783	0271L0702783	28.255	86.259	Kosi	M(o)	0.88	5,452	2856	0271L0802856	28.193	86.351	Kosi	M(e)	19.87	5,339
2784	0271L0702784	28.253	86.290	Kosi	I(s)	0.26	5,010	2857	0271L0802857	28.192	86.326	Kosi	M(o)	1.99	5,401
2785	0271L0702785	28.253	86.264	Kosi	M(o)	0.72	5,378	2858	0271L0802858	28.191	86.342	Kosi	M(o)	0.37	5,583
2786	0271L0702786	28.252	86.254	Kosi	M(o)	1.09	5,569	2859	0271L0802859	28.189	86.323	Kosi	M(o)	1.06	5,357
2787	0271L0702787	28.252	86.313	Kosi	M(o)	0.26	5,537	2860	0271L0802860	28.189	86.369	Kosi	M(o)	1.58	5,457
2788	0271L0702788	28.199	86.582	Kosi	M(e)	134.64	5,094	2861	0271L0802861	28.187	86.356	Kosi	M(o)	0.26	5,324
2789	0271L0802789	28.250	86.395	Kosi	I(s)	0.78	5,270	2862	0271L0802862	28.186	86.348	Kosi	M(o)	0.94	5,439
2790	0271L0802790	28.249	86.288	Kosi	I(s)	0.26	4,983	2863	0271L0802863	28.186	86.343	Kosi	M(o)	2.57	5,487
2791	0271L0802791	28.247	86.393	Kosi	I(s)	0.27	5,236	2864	0271L0802864	28.182	86.347	Kosi	M(o)	2.25	5,452
2792	0271L0802792	28.247	86.257	Kosi	M(o)	0.88	5,474	2865	0271L0802865	28.181	86.343	Kosi	M(l)	2.48	5,441
2793	0271L0802793	28.247	86.260	Kosi	M(o)	0.54	5,395	2866	0271L0802866	28.178	86.322	Kosi	M(o)	3.80	5,226
2794	0271L0802794	28.247	86.317	Kosi	M(o)	3.31	5,466	2867	0271L0802867	28.178	86.408	Kosi	E(o)	0.55	5,309
2795	0271L0802795	28.247	86.287	Kosi	I(s)	0.32	4,963	2868	0271L0802868	28.178	86.390	Kosi	E(o)	0.30	5,192
2796	0271L0802796	28.247	86.262	Kosi	M(o)	0.43	5,392	2869	0271L0802869	28.177	86.352	Kosi	M(o)	0.44	5,253
2797	0271L0802797	28.246	86.395	Kosi	I(s)	0.28	5,240	2870	0271L0802870	28.176	86.357	Kosi	M(o)	1.25	5,237
2798	0271L0802798	28.246	86.308	Kosi	M(o)	0.94	5,554	2871	0271L0802871	28.173	86.394	Kosi	E(o)	0.82	5,097
2799	0271L0802799	28.245	86.289	Kosi	I(s)	0.27	4,967	2872	0271L0802872	28.170	86.308	Kosi	M(o)	2.41	5,011
2800	0271L0802800	28.245	86.321	Kosi	M(o)	21.56	5,361	2873	0271L0802873	28.169	86.469	Kosi	E(o)	0.36	4,858
2801	0271L0802801	28.245	86.394	Kosi	I(s)	1.05	5,228	2874	0271L0802874	28.166	86.283	Kosi	M(o)	0.94	5,008

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
2875	0271L0802875	28.165	86.358	Kosi	M(o)	1.67	5,331	2948	0271L0902948	28.840	86.575	Kosi	E(o)	26.39	5,465
2876	0271L0802876	28.164	86.304	Kosi	M(o)	0.51	5,303	2949	0271L0902949	28.815	86.529	Kosi	E(o)	32.37	5,326
2877	0271L0802877	28.164	86.298	Kosi	M(o)	0.26	5,120	2950	0271L0902950	28.799	86.508	Kosi	E(o)	0.62	5,570
2878	0271L0802878	28.162	86.347	Kosi	E(o)	0.28	5,517	2951	0271L1102951	28.321	86.513	Kosi	M(o)	0.57	5,321
2879	0271L0802879	28.161	86.294	Kosi	M(o)	0.44	5,110	2952	0271L1102952	28.321	86.511	Kosi	M(o)	10.75	5,321
2880	0271L0802880	28.156	86.338	Kosi	M(o)	7.57	5,284	2953	0271L1102953	28.319	86.505	Kosi	M(o)	1.34	5,330
2881	0271L0802881	28.156	86.350	Kosi	E(o)	1.36	5,381	2954	0271L1102954	28.317	86.505	Kosi	M(o)	1.35	5,320
2882	0271L0802882	28.154	86.360	Kosi	E(o)	0.52	5,589	2955	0271L1102955	28.317	86.502	Kosi	M(o)	1.28	5,334
2883	0271L0802883	28.154	86.351	Kosi	E(o)	3.37	5,382	2956	0271L1102956	28.311	86.515	Kosi	M(o)	1.55	5,512
2884	0271L0802884	28.152	86.363	Kosi	E(o)	1.12	5,425	2957	0271L1102957	28.311	86.522	Kosi	M(o)	4.09	5,490
2885	0271L0802885	28.152	86.330	Kosi	M(o)	6.72	5,154	2958	0271L1102958	28.311	86.518	Kosi	M(o)	1.59	5,498
2886	0271L0802886	28.152	86.370	Kosi	M(o)	1.08	5,321	2959	0271L1102959	28.303	86.500	Kosi	E(o)	0.91	5,467
2887	0271L0802887	28.150	86.313	Kosi	M(o)	1.06	5,044	2960	0271L1102960	28.297	86.483	Kosi	E(o)	0.74	5,528
2888	0271L0802888	28.148	86.388	Kosi	E(o)	0.27	5,225	2961	0271L1102961	28.290	86.669	Kosi	E(o)	0.39	5,878
2889	0271L0802889	28.144	86.303	Kosi	M(o)	1.57	5,210	2962	0271L1102962	28.284	86.510	Kosi	I(s)	2.02	5,166
2890	0271L0802890	28.140	86.284	Kosi	M(o)	0.25	5,105	2963	0271L1102963	28.283	86.502	Kosi	I(s)	22.63	5,157
2891	0271L0802891	28.138	86.388	Kosi	E(o)	0.42	4,889	2964	0271L1102964	28.280	86.481	Kosi	M(o)	0.47	5,241
2892	0271L0802892	28.136	86.264	Kosi	M(o)	3.38	5,250	2965	0271L1102965	28.277	86.671	Kosi	M(o)	0.93	5,822
2893	0271L0802893	28.128	86.337	Kosi	E(o)	0.70	5,310	2966	0271L1102966	28.276	86.665	Kosi	M(o)	0.58	5,862
2894	0271L0802894	28.124	86.288	Kosi	E(o)	1.25	5,024	2967	0271L1102967	28.273	86.676	Kosi	M(o)	1.71	5,744
2895	0271L0802895	28.123	86.258	Kosi	M(o)	0.36	5,259	2968	0271L1102968	28.267	86.502	Kosi	M(o)	2.63	5,557
2896	0271L0802896	28.121	86.332	Kosi	E(o)	1.04	5,208	2969	0271L1102969	28.261	86.693	Kosi	E(o)	0.40	5,745
2897	0271L0802897	28.121	86.269	Kosi	M(o)	0.25	5,220	2970	0271L1102970	28.259	86.540	Kosi	M(o)	0.74	5,543
2898	0271L0802898	28.120	86.328	Kosi	M(o)	1.99	5,266	2971	0271L1102971	28.258	86.516	Kosi	E(o)	0.70	5,856
2899	0271L0802899	28.119	86.279	Kosi	E(o)	0.65	4,935	2972	0271L1102972	28.258	86.520	Kosi	E(o)	0.33	5,842
2900	0271L0802900	28.111	86.323	Kosi	E(o)	0.38	5,318	2973	0271L1102973	28.256	86.515	Kosi	E(o)	0.55	5,842
2901	0271L0802901	28.108	86.498	Kosi	M(o)	0.59	4,788	2974	0271L1102974	28.256	86.517	Kosi	E(o)	0.40	5,823
2902	0271L0802902	28.096	86.254	Kosi	M(o)	0.60	5,218	2975	0271L1102975	28.255	86.530	Kosi	M(o)	1.06	5,581
2903	0271L0802903	28.092	86.319	Kosi	M(o)	0.33	5,302	2976	0271L1102976	28.255	86.518	Kosi	E(o)	0.40	5,815
2904	0271L0802904	28.092	86.257	Kosi	M(o)	7.14	5,063	2977	0271L1102977	28.250	86.536	Kosi	E(o)	0.54	5,694
2905	0271L0802905	28.090	86.433	Kosi	M(o)	0.56	4,984	2978	0271L1202978	28.277	86.676	Kosi	M(o)	1.58	5,773
2906	0271L0802906	28.083	86.470	Kosi	M(o)	7.43	5,022	2979	0271L1202979	28.274	86.688	Kosi	M(o)	6.00	5,613
2907	0271L0802907	28.083	86.481	Kosi	M(o)	0.48	5,202	2980	0271L1202980	28.257	86.652	Kosi	E(o)	1.86	5,743
2908	0271L0802908	28.083	86.457	Kosi	M(o)	0.27	5,221	2981	0271L1202981	28.247	86.662	Kosi	M(o)	0.51	5,754
2909	0271L0802909	28.082	86.498	Kosi	M(o)	0.32	5,245	2982	0271L1202982	28.245	86.509	Kosi	M(o)	0.68	5,593
2910	0271L0802910	28.079	86.253	Kosi	M(o)	2.83	4,901	2983	0271L1202983	28.242	86.658	Kosi	M(o)	1.34	5,690
2911	0271L0802911	28.077	86.489	Kosi	I(s)	0.38	5,451	2984	0271L1202984	28.235	86.749	Kosi	M(o)	0.53	5,781
2912	0271L0802912	28.076	86.438	Kosi	E(o)	2.13	5,089	2985	0271L1202985	28.234	86.667	Kosi	M(e)	9.87	5,671
2913	0271L0802913	28.075	86.479	Kosi	M(o)	0.86	5,056	2986	0271L1202986	28.227	86.669	Kosi	E(o)	0.34	5,902
2914	0271L0802914	28.074	86.467	Kosi	M(o)	1.28	5,328	2987	0271L1202987	28.221	86.507	Kosi	M(o)	0.58	5,504
2915	0271L0802915	28.068	86.476	Kosi	M(o)	0.33	5,190	2988	0271L1202988	28.221	86.503	Kosi	M(o)	4.47	5,483
2916	0271L0802916	28.068	86.450	Kosi	M(o)	0.60	5,201	2989	0271L1202989	28.216	86.588	Kosi	M(o)	0.32	5,108
2917	0271L0802917	28.067	86.461	Kosi	M(o)	0.63	5,279	2990	0271L1202990	28.215	86.587	Kosi	M(o)	0.58	5,106
2918	0271L0802918	28.065	86.473	Kosi	M(o)	1.59	5,226	2991	0271L1202991	28.215	86.586	Kosi	M(o)	0.50	5,104
2919	0271L0802919	28.064	86.456	Kosi	M(e)	1.77	5,204	2992	0271L1202992	28.214	86.616	Kosi	M(o)	0.42	5,482
2920	0271L0802920	28.059	86.499	Kosi	I(s)	0.44	5,640	2993	0271L1202993	28.214	86.624	Kosi	M(o)	0.72	5,542
2921	0271L0802921	28.056	86.263	Kosi	E(o)	2.57	4,570	2994	0271L1202994	28.214	86.584	Kosi	M(o)	0.31	5,101
2922	0271L0802922	28.053	86.491	Kosi	M(o)	1.85	5,345	2995	0271L1202995	28.213	86.624	Kosi	M(o)	1.01	5,545
2923	0271L0802923	28.051	86.491	Kosi	M(o)	0.81	5,353	2996	0271L1202996	28.213	86.620	Kosi	M(o)	0.48	5,526
2924	0271L0802924	28.051	86.460	Kosi	E(o)	0.76	5,175	2997	0271L1202997	28.213	86.615	Kosi	M(o)	0.32	5,481
2925	0271L0802925	28.050	86.493	Kosi	M(o)	2.73	5,317	2998	0271L1202998	28.212	86.585	Kosi	M(o)	2.16	5,099
2926	0271L0802926	28.049	86.484	Kosi	M(o)	0.64	5,249	2999	0271L1202999	28.212	86.617	Kosi	M(o)	0.38	5,504
2927	0271L0802927	28.048	86.490	Kosi	M(o)	0.25	5,318	3000	0271L1203000	28.212	86.626	Kosi	M(o)	1.04	5,551
2928	0271L0802928	28.047	86.481	Kosi	M(o)	0.29	5,238	3001	0271L1203001	28.211	86.583	Kosi	M(o)	0.37	5,096
2929	0271L0802929	28.041	86.498	Kosi	E(o)	0.87	5,232	3002	0271L1203002	28.211	86.585	Kosi	M(o)	0.29	5,100
2930	0271L0802930	28.037	86.408	Kosi	M(o)	3.23	4,925	3003	0271L1203003	28.211	86.743	Kosi	M(o)	1.29	5,874
2931	0271L0802931	28.036	86.481	Kosi	M(l)	3.62	4,990	3004	0271L1203004	28.210	86.621	Kosi	M(o)	0.66	5,533
2932	0271L0802932	28.033	86.500	Kosi	M(e)	60.86	5,057	3005	0271L1203005	28.210	86.654	Kosi	M(o)	1.13	5,718
2933	0271L0802933	28.028	86.364	Kosi	E(o)	0.41	4,882	3006	0271L1203006	28.207	86.629	Kosi	M(e)	27.78	5,539
2934	0271L0802934	28.027	86.390	Kosi	M(o)	0.47	5,402	3007	0271L1203007	28.204	86.585	Kosi	M(o)	0.34	5,099
2935	0271L0802935	28.026	86.418	Kosi	I(s)	0.26	5,349	3008	0271L1203008	28.204	86.748	Kosi	M(o)	5.62	5,734
2936	0271L0802936	28.023	86.391	Kosi	M(o)	1.35	5,301	3009	0271L1203009	28.202	86.622	Kosi	M(o)	4.76	5,600
2937	0271L0802937	28.021	86.389	Kosi	M(o)	0.33	5,328	3010	0271L1203010	28.202	86.549	Kosi	M(o)	6.19	5,338
2938	0271L0802938	28.019	86.393	Kosi	M(o)	0.75	5,290	3011	0271L1203011	28.194	86.544	Kosi	M(o)	0.66	5,502
2939	0271L0802939	28.016	86.498	Kosi	M(o)	0.33	5,210	3012	0271L1203012	28.187	86.604	Kosi	M(o)	0.58	5,537
2940	0271L0802940	28.014	86.475	Kosi	M(o)	1.19	5,352	3013	0271L1203013	28.185	86.532	Kosi	M(e)	67.68	5,025
2941	0271L0802941	28.011	86.412	Kosi	M(o)	1.03	5,172	3014	0271L1203014	28.181	86.530	Kosi	M(o)	0.74	5,162
2942	0271L0802942	28.006	86.481	Kosi	M(o)	1.53	5,320	3015	0271L1203015	28.181	86.581	Kosi	M(o)	0.31	5,241
2943	0271L0802943	28.005	86.479	Kosi	M(o)	0.38	5,349	3016	0271L1203016	28.180	86.509	Kosi	E(o)	0.30	4,915
2944	0271L0802944	28.003	86.445	Kosi	M(o)	2.17	5,101	3017	0271L1203017	28.178	86.589	Kosi	M(o)	0.31	5,182
2945	0271L0802945	28.001	86.425	Kosi	E(o)	4.13	4,935	3018	0271L1203018	28.173	86.586	Kosi	M(o)	0.33	5,231
2946	0271L0802946	28.000	86.435	Kosi	M(o)	1.31	5,007	3019	0271L1203019	28.172	86.518	Kosi	M(o)	4.13	5,191
2947	0271L0902947	28.887	86.514	Kosi	E(o)	98.23	5,098	3020	0271L1203020	28.170	86.624	Kosi	M(o)	3.75	5,769

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
3021	0271L1203021	28.162	86.613	Kosi	I(s)	0.35	5,547	3094	0271L1203094	28.030	86.553	Kosi	I(s)	0.25	5,179
3022	0271L1203022	28.161	86.619	Kosi	I(s)	0.73	5,581	3095	0271L1203095	28.029	86.689	Kosi	I(s)	0.43	5,079
3023	0271L1203023	28.155	86.637	Kosi	I(s)	0.30	5,745	3096	0271L1203096	28.029	86.657	Kosi	I(s)	0.35	5,506
3024	0271L1203024	28.151	86.535	Kosi	M(o)	18.48	5,220	3097	0271L1203097	28.029	86.670	Kosi	M(o)	2.86	5,219
3025	0271L1203025	28.150	86.724	Kosi	I(s)	0.45	5,988	3098	0271L1203098	28.029	86.582	Kosi	I(s)	0.41	5,054
3026	0271L1203026	28.149	86.742	Kosi	I(s)	0.46	5,773	3099	0271L1203099	28.028	86.736	Kosi	I(s)	0.33	5,234
3027	0271L1203027	28.148	86.613	Kosi	I(s)	0.29	5,781	3100	0271L1203100	28.028	86.559	Kosi	I(s)	0.42	5,135
3028	0271L1203028	28.148	86.615	Kosi	M(o)	0.35	5,748	3101	0271L1203101	28.028	86.723	Kosi	I(s)	0.25	5,056
3029	0271L1203029	28.141	86.553	Kosi	M(o)	1.27	5,473	3102	0271L1203102	28.028	86.685	Kosi	M(o)	2.09	5,161
3030	0271L1203030	28.139	86.554	Kosi	M(o)	0.38	5,434	3103	0271L1203103	28.028	86.687	Kosi	M(o)	1.46	5,153
3031	0271L1203031	28.139	86.594	Kosi	M(o)	0.27	5,538	3104	0271L1203104	28.027	86.557	Kosi	I(s)	0.72	5,141
3032	0271L1203032	28.135	86.531	Kosi	M(e)	97.85	4,984	3105	0271L1203105	28.026	86.682	Kosi	M(o)	18.71	5,149
3033	0271L1203033	28.134	86.556	Kosi	M(o)	0.25	5,426	3106	0271L1203106	28.026	86.609	Kosi	E(o)	0.27	5,348
3034	0271L1203034	28.133	86.548	Kosi	M(o)	3.67	5,237	3107	0271L1203107	28.025	86.676	Kosi	M(o)	0.27	5,200
3035	0271L1203035	28.132	86.551	Kosi	E(o)	0.33	5,286	3108	0271L1203108	28.025	86.559	Kosi	I(s)	0.25	5,122
3036	0271L1203036	28.126	86.531	Kosi	E(o)	0.30	5,355	3109	0271L1203109	28.024	86.671	Kosi	M(o)	2.57	5,336
3037	0271L1203037	28.125	86.529	Kosi	M(o)	0.44	5,357	3110	0271L1203110	28.023	86.579	Kosi	I(s)	0.52	5,026
3038	0271L1203038	28.106	86.531	Kosi	M(e)	4.57	5,266	3111	0271L1203111	28.023	86.608	Kosi	M(o)	1.07	5,419
3039	0271L1203039	28.099	86.511	Kosi	I(s)	0.91	4,850	3112	0271L1203112	28.022	86.600	Kosi	M(o)	0.49	5,268
3040	0271L1203040	28.098	86.514	Kosi	I(s)	0.34	4,858	3113	0271L1203113	28.022	86.565	Kosi	I(s)	0.30	5,097
3041	0271L1203041	28.097	86.547	Kosi	I(s)	0.29	5,111	3114	0271L1203114	28.021	86.708	Kosi	I(s)	1.08	4,995
3042	0271L1203042	28.093	86.518	Kosi	I(s)	0.75	4,885	3115	0271L1203115	28.021	86.579	Kosi	I(s)	0.49	5,015
3043	0271L1203043	28.091	86.523	Kosi	I(s)	0.26	4,912	3116	0271L1203116	28.021	86.548	Kosi	M(o)	0.72	5,183
3044	0271L1203044	28.089	86.547	Kosi	I(s)	0.30	5,063	3117	0271L1203117	28.021	86.697	Kosi	I(s)	0.35	4,985
3045	0271L1203045	28.085	86.506	Kosi	M(o)	0.33	5,136	3118	0271L1203118	28.020	86.658	Kosi	E(o)	0.39	5,458
3046	0271L1203046	28.084	86.545	Kosi	M(o)	0.43	5,228	3119	0271L1203119	28.020	86.550	Kosi	M(o)	0.27	5,173
3047	0271L1203047	28.084	86.543	Kosi	M(o)	0.49	5,222	3120	0271L1203120	28.019	86.552	Kosi	M(o)	0.37	5,161
3048	0271L1203048	28.083	86.503	Kosi	M(o)	1.16	5,167	3121	0271L1203121	28.019	86.733	Kosi	M(o)	3.45	5,224
3049	0271L1203049	28.083	86.514	Kosi	M(o)	0.62	5,195	3122	0271L1203122	28.019	86.697	Kosi	I(s)	0.35	4,971
3050	0271L1203050	28.078	86.581	Kosi	I(s)	0.26	5,375	3123	0271L1203123	28.017	86.721	Kosi	M(o)	19.81	5,066
3051	0271L1203051	28.073	86.520	Kosi	M(e)	23.11	5,216	3124	0271L1203124	28.017	86.581	Kosi	I(s)	1.25	4,999
3052	0271L1203052	28.070	86.585	Kosi	I(s)	0.36	5,315	3125	0271L1203125	28.016	86.729	Kosi	M(o)	0.26	5,188
3053	0271L1203053	28.070	86.590	Kosi	I(s)	0.26	5,308	3126	0271L1203126	28.016	86.675	Kosi	E(o)	0.61	5,208
3054	0271L1203054	28.067	86.583	Kosi	I(s)	0.50	5,323	3127	0271L1203127	28.016	86.643	Kosi	M(o)	3.42	5,109
3055	0271L1203055	28.067	86.516	Kosi	M(o)	0.26	5,289	3128	0271L1203128	28.016	86.724	Kosi	M(o)	1.08	5,103
3056	0271L1203056	28.066	86.585	Kosi	I(s)	0.33	5,297	3129	0271L1203129	28.015	86.503	Kosi	M(o)	1.92	5,320
3057	0271L1203057	28.066	86.585	Kosi	I(s)	0.34	5,289	3130	0271L1203130	28.015	86.699	Kosi	I(s)	0.55	4,975
3058	0271L1203058	28.063	86.520	Kosi	M(o)	2.79	5,255	3131	0271L1203131	28.014	86.705	Kosi	I(s)	0.94	4,957
3059	0271L1203059	28.062	86.525	Kosi	M(o)	0.25	5,226	3132	0271L1203132	28.010	86.544	Kosi	I(s)	0.27	5,277
3060	0271L1203060	28.060	86.591	Kosi	I(s)	0.44	5,236	3133	0271L1203133	28.009	86.560	Kosi	M(o)	0.59	5,209
3061	0271L1203061	28.053	86.624	Kosi	I(s)	0.51	5,386	3134	0271L1203134	28.009	86.695	Kosi	I(s)	1.12	4,922
3062	0271L1203062	28.053	86.624	Kosi	I(s)	0.30	5,381	3135	0271L1203135	28.008	86.628	Kosi	I(s)	0.58	5,021
3063	0271L1203063	28.050	86.582	Kosi	I(s)	0.73	5,213	3136	0271L1203136	28.008	86.566	Kosi	M(o)	0.52	5,176
3064	0271L1203064	28.049	86.588	Kosi	I(s)	1.52	5,156	3137	0271L1203137	28.007	86.641	Kosi	M(o)	3.81	5,157
3065	0271L1203065	28.048	86.594	Kosi	I(s)	0.65	5,172	3138	0271L1203138	28.007	86.592	Kosi	I(s)	0.37	4,943
3066	0271L1203066	28.048	86.679	Kosi	I(s)	0.39	5,204	3139	0271L1203139	28.006	86.682	Kosi	M(l)	17.13	4,947
3067	0271L1203067	28.048	86.504	Kosi	M(e)	9.00	5,341	3140	0271L1203140	28.005	86.627	Kosi	I(s)	0.30	5,021
3068	0271L1203068	28.047	86.586	Kosi	I(s)	0.25	5,163	3141	0271L1203141	28.005	86.632	Kosi	M(l)	2.49	5,062
3069	0271L1203069	28.046	86.587	Kosi	I(s)	0.38	5,158	3142	0271L1203142	28.005	86.625	Kosi	I(s)	0.55	5,013
3070	0271L1203070	28.046	86.625	Kosi	I(s)	0.28	5,314	3143	0271L1203143	28.004	86.598	Kosi	I(s)	0.29	4,918
3071	0271L1203071	28.045	86.592	Kosi	I(s)	0.50	5,137	3144	0271L1203144	28.003	86.694	Kosi	I(s)	0.47	4,919
3072	0271L1203072	28.044	86.514	Kosi	M(l)	57.94	5,241	3145	0271L1203145	28.003	86.693	Kosi	I(s)	0.35	4,919
3073	0271L1203073	28.044	86.709	Kosi	M(o)	0.89	5,330	3146	0271L1203146	28.001	86.624	Kosi	I(s)	0.99	4,982
3074	0271L1203074	28.044	86.519	Kosi	M(o)	1.10	5,262	3147	0271L1203147	28.000	86.692	Kosi	I(s)	1.22	4,909
3075	0271L1203075	28.044	86.681	Kosi	I(s)	0.25	5,186	3148	0271L1603148	28.195	86.802	Kosi	E(o)	0.61	5,588
3076	0271L1203076	28.044	86.627	Kosi	I(s)	1.26	5,285	3149	0271L1603149	28.190	86.774	Kosi	M(o)	0.52	5,490
3077	0271L1203077	28.042	86.518	Kosi	M(l)	2.92	5,256	3150	0271L1603150	28.185	86.805	Kosi	M(e)	2.64	5,530
3078	0271L1203078	28.041	86.706	Kosi	M(o)	2.75	5,357	3151	0271L1603151	28.182	86.758	Kosi	I(s)	0.63	5,526
3079	0271L1203079	28.040	86.673	Kosi	M(o)	2.38	5,221	3152	0271L1603152	28.180	86.770	Kosi	E(o)	0.40	5,681
3080	0271L1203080	28.039	86.508	Kosi	M(o)	0.92	5,221	3153	0271L1603153	28.178	86.775	Kosi	M(o)	0.41	5,855
3081	0271L1203081	28.039	86.588	Kosi	I(s)	0.45	5,125	3154	0271L1603154	28.166	86.807	Kosi	M(e)	5.21	5,663
3082	0271L1203082	28.038	86.710	Kosi	M(e)	15.44	5,363	3155	0271L1603155	28.145	86.968	Kosi	M(o)	1.97	5,729
3083	0271L1203083	28.037	86.651	Kosi	M(o)	0.59	5,437	3156	0271L1603156	28.144	86.834	Kosi	M(o)	0.49	5,410
3084	0271L1203084	28.036	86.689	Kosi	I(s)	0.60	5,121	3157	0271L1603157	28.144	86.834	Kosi	I(s)	1.89	5,408
3085	0271L1203085	28.036	86.610	Kosi	M(o)	1.73	5,335	3158	0271L1603158	28.141	86.831	Kosi	I(s)	6.11	5,414
3086	0271L1203086	28.036	86.602	Kosi	E(o)	0.67	5,543	3159	0271L1603159	28.132	86.851	Kosi	M(o)	3.45	5,155
3087	0271L1203087	28.036	86.651	Kosi	M(o)	0.26	5,430	3160	0271L1603160	28.130	86.855	Kosi	I(s)	0.35	5,207
3088	0271L1203088	28.035	86.508	Kosi	I(s)	0.64	5,101	3161	0271L1603161	28.130	86.856	Kosi	I(s)	0.39	5,214
3089	0271L1203089	28.034	86.671	Kosi	E(o)	1.65	5,400	3162	0271L1603162	28.129	86.858	Kosi	I(s)	0.36	5,218
3090	0271L1203090	28.034	86.580	Kosi	I(s)	0.64	5,054	3163	0271L1603163	28.118	86.862	Kosi	I(s)	6.09	5,224
3091	0271L1203091	28.031	86.623	Kosi	I(s)	0.43	5,177	3164	0271L1603164	28.112	86.863	Kosi	I(s)	39.40	5,218
3092	0271L1203092	28.031	86.724	Kosi	I(s)	0.49	5,078	3165	0271L1603165	28.108	86.861	Kosi	I(s)	0.58	5,233
3093	0271L1203093	28.031	86.647	Kosi	M(o)	1.97	5,324	3166	0271L1603166	28.098	86.890	Kosi	M(o)	0.48	5,544

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
3167	0271L1603167	28.095	86.864	Kosi	I(s)	0.30	5,318	3240	0271P0403240	28.022	87.193	Kosi	E(o)	1.36	5,029
3168	0271L1603168	28.081	86.871	Kosi	I(s)	0.66	5,370	3241	0271P0403241	28.022	87.243	Kosi	E(o)	2.75	4,944
3169	0271L1603169	28.020	86.769	Kosi	I(s)	0.51	5,613	3242	0271P0403242	28.015	87.233	Kosi	E(c)	9.40	4,761
3170	0271L1603170	28.014	86.753	Kosi	I(s)	0.71	5,611	3243	0271P0403243	28.009	87.062	Kosi	M(o)	3.16	5,489
3171	0271L1603171	28.008	86.849	Kosi	M(o)	0.58	5,359	3244	0271P0403244	28.008	87.033	Kosi	M(o)	5.98	5,573
3172	0271L1603172	28.007	86.853	Kosi	M(o)	0.33	5,317	3245	0271P0403245	28.007	87.028	Kosi	M(e)	14.23	5,509
3173	0271L1603173	28.007	86.762	Kosi	I(s)	0.29	5,480	3246	0271P0403246	28.005	87.142	Kosi	M(e)	43.70	4,450
3174	0271L1603174	28.006	86.861	Kosi	I(s)	0.29	5,338	3247	0271P0403247	28.004	87.249	Kosi	E(o)	0.53	4,697
3175	0271L1603175	28.001	86.840	Kosi	M(o)	0.67	5,406	3248	0271P0403248	28.002	87.246	Kosi	E(o)	2.53	4,573
3176	0271P0303176	28.274	87.150	Kosi	E(o)	11.91	5,012	3249	0271P0503249	28.924	87.450	Kosi	E(o)	0.53	5,192
3177	0271P0303177	28.270	87.246	Kosi	E(o)	15.31	5,166	3250	0271P0503250	28.864	87.446	Kosi	O	0.46	5,329
3178	0271P0303178	28.251	87.219	Kosi	E(o)	0.33	5,307	3251	0271P0503251	28.847	87.491	Kosi	E(o)	3.64	5,405
3179	0271P0403179	28.246	87.230	Kosi	E(o)	0.69	5,198	3252	0271P0503252	28.838	87.492	Kosi	E(o)	5.60	5,454
3180	0271P0403180	28.234	87.078	Kosi	E(o)	2.20	4,950	3253	0271P0503253	28.834	87.492	Kosi	E(o)	0.91	5,455
3181	0271P0403181	28.226	87.053	Kosi	M(e)	17.19	5,050	3254	0271P0503254	28.819	86.499	Kosi	E(o)	0.99	5,497
3182	0271P0403182	28.208	87.101	Kosi	E(o)	101.93	4,852	3255	0271P0503255	28.802	87.437	Kosi	E(o)	2.00	5,481
3183	0271P0403183	28.205	87.052	Kosi	O	65.11	4,980	3256	0271P0503256	28.792	87.481	Kosi	E(o)	6.10	5,621
3184	0271P0403184	28.197	87.169	Kosi	E(o)	0.82	5,014	3257	0271P0503257	28.788	87.469	Kosi	E(o)	3.21	5,498
3185	0271P0403185	28.190	87.199	Kosi	E(o)	0.45	4,929	3258	0271P0503258	28.788	87.453	Kosi	E(o)	4.12	5,583
3186	0271P0403186	28.187	87.164	Kosi	E(o)	2.96	5,230	3259	0271P0503259	28.785	87.472	Kosi	E(o)	3.30	5,499
3187	0271P0403187	28.186	87.171	Kosi	E(o)	1.19	5,351	3260	0271P0503260	28.780	87.493	Kosi	O	0.45	5,507
3188	0271P0403188	28.183	87.080	Kosi	M(o)	1.22	5,259	3261	0271P0503261	28.778	87.455	Kosi	E(o)	0.47	5,692
3189	0271P0403189	28.181	87.080	Kosi	M(o)	0.32	5,273	3262	0271P0503262	28.776	87.397	Kosi	E(o)	0.85	5,370
3190	0271P0403190	28.181	87.172	Kosi	E(o)	0.66	5,368	3263	0271P0503263	28.776	87.482	Kosi	E(o)	1.11	5,531
3191	0271P0403191	28.180	87.081	Kosi	M(o)	0.44	5,266	3264	0271P0503264	28.775	87.437	Kosi	E(o)	21.80	5,553
3192	0271P0403192	28.171	87.068	Kosi	M(e)	7.84	5,564	3265	0271P0503265	28.772	87.389	Kosi	E(o)	3.10	5,372
3193	0271P0403193	28.170	87.148	Kosi	E(o)	0.87	5,205	3266	0271P0503266	28.771	87.407	Kosi	E(o)	2.27	5,409
3194	0271P0403194	28.169	87.103	Kosi	E(o)	2.92	5,313	3267	0271P0503267	28.769	87.331	Kosi	E(o)	0.28	5,515
3195	0271P0403195	28.168	87.148	Kosi	E(o)	0.52	5,198	3268	0271P0503268	28.769	87.470	Kosi	E(o)	0.65	5,592
3196	0271P0403196	28.166	87.122	Kosi	E(o)	12.23	5,219	3269	0271P0503269	28.768	87.401	Kosi	E(o)	3.34	5,395
3197	0271P0403197	28.159	87.143	Kosi	E(o)	18.93	5,154	3270	0271P0503270	28.768	87.449	Kosi	E(o)	7.03	5,612
3198	0271P0403198	28.156	87.122	Kosi	E(o)	0.52	5,298	3271	0271P0503271	28.767	87.498	Kosi	E(o)	0.54	5,582
3199	0271P0403199	28.156	87.145	Kosi	E(o)	5.36	5,161	3272	0271P0503272	28.766	87.451	Kosi	E(o)	3.11	5,610
3200	0271P0403200	28.155	87.111	Kosi	E(o)	6.22	5,384	3273	0271P0503273	28.763	87.458	Kosi	E(o)	1.00	5,637
3201	0271P0403201	28.152	87.158	Kosi	O	94.74	5,141	3274	0271P0503274	28.762	87.456	Kosi	E(o)	1.66	5,636
3202	0271P0403202	28.152	87.174	Kosi	O	10.97	5,075	3275	0271P0503275	28.760	87.417	Kosi	E(o)	15.68	5,458
3203	0271P0403203	28.145	87.153	Kosi	E(o)	0.36	5,155	3276	0271P0503276	28.755	87.433	Kosi	E(o)	2.03	5,544
3204	0271P0403204	28.145	87.104	Kosi	M(o)	0.47	5,478	3277	0271P0503277	28.754	87.421	Kosi	E(o)	4.46	5,495
3205	0271P0403205	28.144	87.155	Kosi	E(o)	0.55	5,154	3278	0271P0503278	28.754	87.427	Kosi	E(o)	13.58	5,511
3206	0271P0403206	28.143	87.102	Kosi	M(o)	2.01	5,479	3279	0271P0503279	28.750	87.455	Kosi	E(o)	31.67	5,680
3207	0271P0403207	28.143	87.075	Kosi	M(o)	0.84	5,615	3280	0271P0503280	28.750	87.435	Kosi	E(o)	3.04	5,546
3208	0271P0403208	28.142	87.105	Kosi	M(o)	16.53	5,472	3281	0271P0603281	28.750	87.371	Kosi	E(o)	0.48	5,473
3209	0271P0403209	28.142	87.112	Kosi	M(o)	25.06	5,470	3282	0271P0603282	28.748	87.378	Kosi	E(o)	1.89	5,490
3210	0271P0403210	28.141	87.076	Kosi	M(o)	0.62	5,591	3283	0271P0603283	28.748	87.376	Kosi	E(o)	2.88	5,491
3211	0271P0403211	28.138	87.079	Kosi	M(o)	0.63	5,567	3284	0271P0603284	28.746	87.462	Kosi	E(o)	0.54	5,710
3212	0271P0403212	28.136	87.126	Kosi	E(o)	1.35	5,407	3285	0271P0603285	28.746	87.447	Kosi	E(o)	1.76	5,663
3213	0271P0403213	28.133	87.078	Kosi	M(e)	4.97	5,514	3286	0271P0603286	28.744	87.372	Kosi	E(o)	0.57	5,448
3214	0271P0403214	28.130	87.082	Kosi	M(e)	19.29	5,518	3287	0271P0603287	28.744	87.435	Kosi	E(o)	0.40	5,572
3215	0271P0403215	28.125	87.193	Kosi	E(o)	2.01	5,329	3288	0271P0603288	28.743	87.436	Kosi	E(o)	0.42	5,574
3216	0271P0403216	28.123	87.190	Kosi	E(o)	0.80	5,351	3289	0271P0603289	28.742	87.438	Kosi	E(o)	6.49	5,570
3217	0271P0403217	28.123	87.058	Kosi	M(o)	2.92	5,745	3290	0271P0603290	28.742	87.382	Kosi	E(o)	41.57	5,501
3218	0271P0403218	28.118	87.170	Kosi	E(o)	3.09	5,260	3291	0271P0603291	28.740	87.462	Kosi	E(o)	0.43	5,588
3219	0271P0403219	28.118	87.215	Kosi	E(o)	1.46	5,210	3292	0271P0603292	28.738	87.391	Kosi	E(o)	8.18	5,524
3220	0271P0403220	28.114	87.203	Kosi	E(o)	0.93	5,271	3293	0271P0603293	28.737	87.479	Kosi	E(o)	23.55	5,415
3221	0271P0403221	28.112	87.222	Kosi	E(o)	1.34	5,253	3294	0271P0603294	28.737	87.469	Kosi	E(o)	3.52	5,497
3222	0271P0403222	28.111	87.065	Kosi	M(o)	31.03	5,468	3295	0271P0603295	28.736	87.422	Kosi	E(o)	1.23	5,766
3223	0271P0403223	28.110	87.233	Kosi	E(o)	0.91	5,255	3296	0271P0603296	28.736	87.414	Kosi	E(o)	3.65	5,613
3224	0271P0403224	28.108	87.246	Kosi	E(o)	1.10	5,073	3297	0271P0603297	28.736	87.383	Kosi	E(o)	1.30	5,527
3225	0271P0403225	28.105	87.058	Kosi	M(o)	1.35	5,679	3298	0271P0603298	28.735	87.416	Kosi	E(o)	0.87	5,616
3226	0271P0403226	28.101	87.001	Kosi	M(o)	0.61	6,177	3299	0271P0603299	28.735	87.440	Kosi	E(o)	23.96	5,577
3227	0271P0403227	28.100	87.076	Kosi	M(o)	9.97	5,542	3300	0271P0603300	28.735	87.386	Kosi	E(o)	0.75	5,529
3228	0271P0403228	28.083	87.173	Kosi	E(o)	2.18	4,873	3301	0271P0603301	28.735	87.446	Kosi	E(o)	1.36	5,606
3229	0271P0403229	28.074	87.055	Kosi	M(o)	0.86	5,596	3302	0271P0603302	28.735	87.402	Kosi	E(o)	0.96	5,598
3230	0271P0403230	28.073	87.031	Kosi	M(o)	3.78	5,750	3303	0271P0603303	28.735	87.399	Kosi	E(o)	1.57	5,587
3231	0271P0403231	28.069	87.134	Kosi	M(e)	25.49	4,879	3304	0271P0603304	28.735	87.449	Kosi	E(o)	0.55	5,615
3232	0271P0403232	28.068	87.047	Kosi	M(e)	78.93	5,589	3305	0271P0603305	28.734	87.406	Kosi	E(o)	18.44	5,600
3233	0271P0403233	28.065	87.193	Kosi	M(o)	10.78	4,837	3306	0271P0603306	28.734	87.451	Kosi	E(o)	2.27	5,611
3234	0271P0403234	28.042	87.215	Kosi	E(o)	1.29	5,052	3307	0271P0603307	28.733	87.432	Kosi	E(o)	0.28	5,646
3235	0271P0403235	28.039	87.167	Kosi	M(e)	24.07	4,739	3308	0271P0603308	28.732	87.418	Kosi	E(yo)	0.32	5,633
3236	0271P0403236	28.035	87.185	Kosi	E(o)	1.06	4,981	3309	0271P0603309	28.729	87.436	Kosi	E(o)	5.04	5,598
3237	0271P0403237	28.032	87.190	Kosi	E(c)	27.29	5,013	3310	0271P0603310	28.729	87.393	Kosi	E(o)	3.46	5,557
3238	0271P0403238	28.032	87.182	Kosi	E(o)	1.31	4,956	3311	0271P0603311	28.728	87.478	Kosi	E(o)	24.81	5,384
3239	0271P0403239	28.028	87.188	Kosi	E(o)	3.63	5,074	3312	0271P0603312	28.727	87.419	Kosi	E(o)	0.59	5,695

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
3313	0271P0603313	28.726	87.375	Kosi	E(o)	2.10	5,622	3386	0271P0803386	28.058	87.464	Kosi	E(o)	0.35	4,874
3314	0271P0603314	28.725	87.442	Kosi	E(o)	0.64	5,708	3387	0271P0803387	28.056	87.325	Kosi	E(o)	0.63	4,033
3315	0271P0603315	28.725	87.447	Kosi	E(o)	1.11	5,671	3388	0271P0803388	28.056	87.326	Kosi	E(o)	1.05	4,038
3316	0271P0603316	28.724	87.393	Kosi	E(o)	1.55	5,570	3389	0271P0803389	28.054	87.476	Kosi	E(o)	0.65	4,919
3317	0271P0603317	28.724	87.460	Kosi	E(o)	1.54	5,520	3390	0271P0803390	28.054	87.423	Kosi	E(o)	3.80	4,506
3318	0271P0603318	28.717	87.428	Kosi	E(o)	5.89	5,578	3391	0271P0803391	28.054	87.472	Kosi	E(o)	1.40	4,873
3319	0271P0603319	28.715	87.368	Kosi	E(o)	7.58	5,441	3392	0271P0803392	28.053	87.298	Kosi	E(o)	1.84	4,464
3320	0271P0603320	28.714	87.400	Kosi	E(o)	3.38	5,554	3393	0271P0803393	28.049	87.360	Kosi	E(o)	2.15	4,322
3321	0271P0603321	28.714	87.406	Kosi	E(o)	0.28	5,605	3394	0271P0803394	28.049	87.364	Kosi	E(o)	4.03	4,297
3322	0271P0603322	28.714	87.430	Kosi	E(o)	2.62	5,575	3395	0271P0803395	28.048	87.353	Kosi	E(o)	0.81	4,338
3323	0271P0603323	28.713	87.379	Kosi	E(o)	4.27	5,528	3396	0271P0803396	28.046	87.337	Kosi	E(o)	3.79	4,360
3324	0271P0603324	28.711	87.400	Kosi	E(o)	5.20	5,539	3397	0271P0803397	28.039	87.348	Kosi	E(o)	2.00	4,339
3325	0271P0603325	28.707	87.380	Kosi	E(o)	0.51	5,567	3398	0271P0803398	28.038	87.281	Kosi	E(o)	0.83	4,693
3326	0271P0603326	28.706	87.454	Kosi	E(o)	0.93	5,529	3399	0271P0803399	28.038	87.313	Kosi	E(o)	3.90	4,239
3327	0271P0603327	28.705	87.461	Kosi	E(o)	3.15	5,543	3400	0271P0803400	28.037	87.311	Kosi	E(o)	0.52	4,237
3328	0271P0603328	28.701	87.452	Kosi	E(o)	2.45	5,459	3401	0271P0803401	28.036	87.316	Kosi	E(o)	0.68	4,208
3329	0271P0603329	28.700	87.428	Kosi	E(o)	0.77	5,465	3402	0271P0803402	28.036	87.317	Kosi	E(o)	0.42	4,207
3330	0271P0603330	28.700	87.396	Kosi	E(o)	1.26	5,447	3403	0271P0803403	28.036	87.310	Kosi	E(o)	0.45	4,243
3331	0271P0603331	28.699	87.402	Kosi	E(o)	1.01	5,464	3404	0271P0803404	28.035	87.314	Kosi	E(o)	0.67	4,218
3332	0271P0603332	28.699	87.435	Kosi	E(o)	2.78	5,440	3405	0271P0803405	28.034	87.312	Kosi	E(o)	0.65	4,232
3333	0271P0603333	28.696	87.448	Kosi	E(o)	1.49	5,433	3406	0271P0803406	28.024	87.422	Kosi	E(c)	3.05	4,412
3334	0271P0603334	28.694	87.450	Kosi	E(o)	1.01	5,431	3407	0271P0803407	28.023	87.270	Kosi	E(o)	10.23	4,636
3335	0271P0603335	28.694	87.393	Kosi	E(o)	3.39	5,406	3408	0271P0803408	28.022	87.303	Kosi	E(o)	0.43	4,381
3336	0271P0603336	28.688	87.447	Kosi	E(o)	2.09	5,389	3409	0271P0803409	28.021	87.304	Kosi	E(o)	0.43	4,388
3337	0271P0603337	28.680	87.448	Kosi	E(o)	2.91	5,390	3410	0271P0803410	28.017	87.300	Kosi	E(o)	0.94	4,408
3338	0271P0603338	28.666	87.443	Kosi	E(o)	0.49	5,361	3411	0271P0803411	28.016	87.330	Kosi	E(o)	0.96	4,458
3339	0271P0603339	28.664	87.365	Kosi	E(o)	0.35	4,992	3412	0271P0803412	28.016	87.259	Kosi	E(o)	33.07	4,672
3340	0271P0603340	28.643	87.417	Kosi	E(o)	0.46	4,882	3413	0271P0803413	28.012	87.297	Kosi	E(o)	12.13	4,416
3341	0271P0603341	28.603	87.433	Kosi	O	7.06	4,214	3414	0271P0803414	28.012	87.266	Kosi	E(o)	1.19	4,819
3342	0271P0703342	28.393	86.379	Kosi	M(e)	100.11	5,482	3415	0271P0803415	28.011	87.332	Kosi	E(c)	4.62	4,523
3343	0271P0803343	28.228	87.275	Kosi	E(o)	1.25	5,198	3416	0271P0803416	28.008	87.423	Kosi	E(o)	4.78	4,252
3344	0271P0803344	28.223	87.284	Kosi	E(o)	1.13	5,258	3417	0271P0803417	28.005	87.295	Kosi	E(o)	6.58	4,438
3345	0271P0803345	28.213	87.470	Kosi	O	131.39	4,781	3418	0271P0803418	28.001	87.469	Kosi	E(o)	0.28	4,804
3346	0271P0803346	28.190	87.446	Kosi	E(o)	1.71	5,409	3419	0271P0803419	28.001	87.499	Kosi	E(o)	2.41	4,659
3347	0271P0803347	28.190	87.477	Kosi	E(o)	0.75	5,237	3420	0271P0903420	28.858	86.519	Kosi	E(o)	81.24	5,254
3348	0271P0803348	28.180	87.444	Kosi	E(o)	1.77	5,384	3421	0271P0903421	28.841	87.509	Kosi	E(o)	25.20	5,486
3349	0271P0803349	28.179	87.478	Kosi	M(o)	1.01	5,363	3422	0271P0903422	28.832	86.522	Kosi	E(o)	281.32	5,319
3350	0271P0803350	28.172	87.479	Kosi	M(e)	23.91	5,290	3423	0271P0903423	28.828	87.515	Kosi	E(o)	0.27	5,550
3351	0271P0803351	28.166	87.469	Kosi	E(o)	4.04	5,246	3424	0271P0903424	28.817	87.699	Kosi	E(o)	1.14	5,687
3352	0271P0803352	28.165	87.418	Kosi	O	10.93	4,818	3425	0271P0903425	28.799	87.561	Kosi	E(o)	0.77	5,390
3353	0271P0803353	28.161	87.487	Kosi	M(e)	10.29	5,298	3426	0271P0903426	28.798	87.581	Kosi	E(o)	0.48	5,681
3354	0271P0803354	28.161	87.472	Kosi	E(o)	9.91	5,223	3427	0271P0903427	28.798	87.501	Kosi	E(o)	0.42	5,610
3355	0271P0803355	28.160	87.443	Kosi	O	32.33	4,854	3428	0271P0903428	28.795	87.683	Kosi	E(o)	0.55	5,642
3356	0271P0803356	28.157	87.499	Kosi	E(o)	0.74	5,309	3429	0271P0903429	28.794	87.550	Kosi	E(o)	0.67	5,412
3357	0271P0803357	28.153	87.489	Kosi	M(o)	0.84	5,176	3430	0271P0903430	28.790	87.550	Kosi	E(o)	1.19	5,404
3358	0271P0803358	28.152	87.486	Kosi	M(l)	0.68	5,198	3431	0271P0903431	28.785	87.586	Kosi	E(o)	1.10	5,791
3359	0271P0803359	28.148	87.487	Kosi	E(o)	3.65	5,097	3432	0271P0903432	28.784	87.592	Kosi	E(o)	0.50	5,774
3360	0271P0803360	28.148	87.469	Kosi	M(o)	39.58	5,106	3433	0271P0903433	28.784	87.525	Kosi	E(o)	0.73	5,442
3361	0271P0803361	28.146	87.463	Kosi	M(o)	0.86	5,113	3434	0271P0903434	28.783	87.591	Kosi	E(o)	0.47	5,779
3362	0271P0803362	28.143	87.420	Kosi	E(o)	0.90	5,117	3435	0271P0903435	28.776	87.589	Kosi	E(o)	4.90	5,642
3363	0271P0803363	28.142	87.409	Kosi	E(o)	0.68	5,058	3436	0271P0903436	28.776	87.529	Kosi	E(o)	1.05	5,411
3364	0271P0803364	28.140	87.417	Kosi	M(o)	5.72	5,068	3437	0271P0903437	28.776	87.584	Kosi	E(o)	0.99	5,599
3365	0271P0803365	28.137	87.428	Kosi	M(e)	25.85	5,191	3438	0271P0903438	28.773	87.553	Kosi	O	25.64	5,319
3366	0271P0803366	28.136	87.416	Kosi	M(o)	2.85	5,044	3439	0271P0903439	28.770	87.594	Kosi	E(c)	4.20	5,769
3367	0271P0803367	28.133	87.479	Kosi	M(o)	3.68	5,198	3440	0271P0903440	28.769	87.506	Kosi	E(o)	0.50	5,487
3368	0271P0803368	28.128	87.480	Kosi	M(o)	2.66	5,166	3441	0271P0903441	28.765	87.646	Kosi	E(o)	0.94	5,619
3369	0271P0803369	28.128	87.404	Kosi	M(o)	6.73	5,110	3442	0271P0903442	28.765	87.595	Kosi	E(o)	1.54	5,684
3370	0271P0803370	28.124	87.486	Kosi	M(o)	1.53	5,212	3443	0271P0903443	28.765	87.505	Kosi	E(o)	0.34	5,505
3371	0271P0803371	28.122	87.486	Kosi	M(o)	0.77	5,183	3444	0271P0903444	28.762	87.603	Kosi	M(o)	0.55	5,670
3372	0271P0803372	28.120	87.486	Kosi	M(o)	8.52	5,169	3445	0271P0903445	28.762	87.574	Kosi	O	1.55	5,476
3373	0271P0803373	28.114	87.418	Kosi	E(o)	0.65	5,157	3446	0271P0903446	28.762	87.504	Kosi	E(o)	1.65	5,621
3374	0271P0803374	28.112	87.448	Kosi	E(o)	0.30	4,936	3447	0271P0903447	28.761	87.539	Kosi	O	6.62	5,266
3375	0271P0803375	28.111	87.277	Kosi	E(o)	7.20	4,837	3448	0271P0903448	28.759	87.560	Kosi	O	0.39	5,365
3376	0271P0803376	28.110	87.421	Kosi	E(o)	3.07	5,065	3449	0271P0903449	28.755	87.604	Kosi	E(o)	0.94	5,592
3377	0271P0803377	28.109	87.270	Kosi	E(o)	3.23	4,804	3450	0271P0903450	28.755	87.748	Kosi	O	0.36	4,918
3378	0271P0803378	28.107	87.252	Kosi	E(o)	0.86	5,041	3451	0271P0903451	28.754	87.595	Kosi	E(o)	1.42	5,580
3379	0271P0803379	28.104	87.256	Kosi	E(o)	0.32	5,009	3452	0271P0903452	28.748	87.541	Kosi	O	6.50	5,261
3380	0271P0803380	28.072	87.471	Kosi	E(o)	2.13	4,787	3453	0271P1003453	28.779	87.487	Kosi	O	1.42	5,539
3381	0271P0803381	28.072	87.423	Kosi	E(yo)	0.89	4,470	3454	0271P1003454	28.773	87.490	Kosi	E(yo)	9.67	5,516
3382	0271P0803382	28.068	87.472	Kosi	E(o)	3.99	4,861	3455	0271P1003455	28.755	87.627	Kosi	E(o)	0.25	5,581
3383	0271P0803383	28.066	87.437	Kosi	E(o)	2.77	4,715	3456	0271P1003456	28.749	87.631	Kosi	E(o)	0.74	5,539
3384	0271P0803384	28.064	87.354	Kosi	E(o)	13.08	4,190	3457	0271P1003457	28.749	87.552	Kosi	E(o)	0.73	5,289
3385	0271P0803385	28.062	87.324	Kosi	E(o)	1.24	3,987	3458	0271P1003458	28.749	87.596	Kosi	E(o)	0.51	5,545

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
3459	0271P1003459	28.749	87.650	Kosi	E(o)	0.83	5,662	3532	0271P1203532	28.167	87.623	Kosi	M(e)	20.87	5,375
3460	0271P1003460	28.748	87.605	Kosi	E(o)	3.72	5,620	3533	0271P1203533	28.167	87.554	Kosi	E(o)	1.11	5,171
3461	0271P1003461	28.747	87.625	Kosi	E(o)	17.28	5,545	3534	0271P1203534	28.164	87.578	Kosi	M(e)	20.22	5,171
3462	0271P1003462	28.747	87.545	Kosi	O	0.39	5,262	3535	0271P1203535	28.161	87.517	Kosi	E(o)	1.39	5,173
3463	0271P1003463	28.744	87.593	Kosi	E(o)	4.27	5,527	3536	0271P1203536	28.161	87.532	Kosi	E(o)	7.74	5,079
3464	0271P1003464	28.740	87.628	Kosi	E(o)	0.73	5,521	3537	0271P1203537	28.160	87.605	Kosi	E(o)	0.80	5,310
3465	0271P1003465	28.738	87.544	Kosi	O	2.07	5,245	3538	0271P1203538	28.156	87.502	Kosi	E(o)	0.29	5,224
3466	0271P1003466	28.730	87.549	Kosi	E(o)	1.49	5,269	3539	0271P1203539	28.156	87.567	Kosi	E(o)	0.49	5,153
3467	0271P1003467	28.728	87.645	Kosi	E(o)	0.97	5,401	3540	0271P1203540	28.155	87.612	Kosi	M(o)	13.82	5,241
3468	0271P1003468	28.727	87.583	Kosi	E(o)	0.36	5,531	3541	0271P1203541	28.154	87.617	Kosi	M(o)	5.47	5,259
3469	0271P1003469	28.725	87.565	Kosi	E(o)	5.06	5,392	3542	0271P1203542	28.154	87.564	Kosi	E(o)	2.53	5,188
3470	0271P1003470	28.722	87.626	Kosi	E(o)	0.55	5,674	3543	0271P1203543	28.150	87.563	Kosi	E(o)	2.32	5,250
3471	0271P1003471	28.721	87.579	Kosi	E(o)	0.43	5,531	3544	0271P1203544	28.142	87.552	Kosi	M(o)	0.52	5,093
3472	0271P1003472	28.717	87.605	Kosi	E(o)	2.14	5,412	3545	0271P1203545	28.141	87.588	Kosi	E(o)	6.93	5,151
3473	0271P1003473	28.717	87.596	Kosi	E(o)	1.81	5,626	3546	0271P1203546	28.140	87.541	Kosi	E(o)	1.39	4,968
3474	0271P1003474	28.712	87.548	Kosi	O	41.20	5,188	3547	0271P1203547	28.138	87.658	Kosi	E(o)	0.28	5,056
3475	0271P1003475	28.694	87.534	Kosi	E(o)	60.74	5,158	3548	0271P1203548	28.138	87.653	Kosi	E(o)	0.35	5,058
3476	0271P1003476	28.607	88.606	Kosi	O	0.97	4,695	3549	0271P1203549	28.138	87.650	Kosi	E(o)	5.99	5,059
3477	0271P1003477	28.607	88.605	Kosi	O	0.60	4,694	3550	0271P1203550	28.137	87.655	Kosi	E(o)	0.28	5,059
3478	0271P1003478	28.588	88.653	Kosi	O	0.40	5,014	3551	0271P1203551	28.135	87.656	Kosi	E(o)	0.77	5,052
3479	0271P1103479	28.365	87.689	Kosi	E(o)	2.80	5,455	3552	0271P1203552	28.135	87.653	Kosi	E(o)	0.52	5,056
3480	0271P1103480	28.351	87.684	Kosi	E(o)	0.54	5,512	3553	0271P1203553	28.134	87.629	Kosi	E(o)	1.16	5,726
3481	0271P1103481	28.350	87.682	Kosi	E(o)	2.29	5,514	3554	0271P1203554	28.133	87.621	Kosi	E(o)	6.65	5,468
3482	0271P1103482	28.343	87.677	Kosi	E(o)	0.38	5,454	3555	0271P1203555	28.131	87.607	Kosi	E(o)	2.12	5,391
3483	0271P1103483	28.342	87.674	Kosi	E(o)	4.68	5,457	3556	0271P1203556	28.131	87.599	Kosi	M(o)	14.18	5,261
3484	0271P1103484	28.328	87.679	Kosi	E(o)	0.65	5,508	3557	0271P1203557	28.129	87.561	Kosi	E(o)	0.34	5,296
3485	0271P1103485	28.321	87.671	Kosi	E(o)	0.28	5,451	3558	0271P1203558	28.125	87.556	Kosi	E(o)	7.84	5,069
3486	0271P1103486	28.298	87.550	Kosi	E(o)	0.75	5,555	3559	0271P1203559	28.118	87.615	Kosi	M(e)	35.67	5,052
3487	0271P1103487	28.294	87.670	Kosi	E(o)	0.41	5,753	3560	0271P1203560	28.116	87.586	Kosi	M(e)	12.43	5,050
3488	0271P1103488	28.292	87.661	Kosi	E(o)	1.99	5,612	3561	0271P1203561	28.114	87.655	Kosi	M(e)	146.34	4,954
3489	0271P1103489	28.285	87.565	Kosi	E(o)	0.74	5,528	3562	0271P1203562	28.107	87.584	Kosi	M(e)	15.91	4,968
3490	0271P1103490	28.281	87.662	Kosi	M(o)	0.27	5,715	3563	0271P1203563	28.103	87.569	Kosi	E(o)	3.13	4,904
3491	0271P1103491	28.280	87.661	Kosi	M(o)	0.35	5,717	3564	0271P1203564	28.103	87.627	Kosi	E(o)	0.94	5,447
3492	0271P1103492	28.280	87.663	Kosi	M(o)	0.28	5,718	3565	0271P1203565	28.103	87.619	Kosi	E(o)	0.53	5,487
3493	0271P1103493	28.279	87.670	Kosi	M(o)	2.49	5,632	3566	0271P1203566	28.093	87.637	Kosi	M(e)	72.47	5,178
3494	0271P1103494	28.278	87.661	Kosi	M(o)	3.76	5,765	3567	0271P1203567	28.091	87.548	Kosi	E(o)	3.26	5,080
3495	0271P1103495	28.277	87.588	Kosi	M(o)	5.35	5,516	3568	0271P1203568	28.082	87.572	Kosi	E(o)	0.57	5,179
3496	0271P1103496	28.271	87.640	Kosi	M(o)	1.72	5,714	3569	0271P1203569	28.078	87.558	Kosi	E(o)	1.77	5,057
3497	0271P1103497	28.268	87.634	Kosi	M(o)	10.04	5,674	3570	0271P1203570	28.072	87.578	Kosi	M(l)	3.21	4,813
3498	0271P1103498	28.262	87.588	Kosi	E(o)	0.75	5,855	3571	0271P1203571	28.072	87.629	Kosi	E(o)	2.90	5,504
3499	0271P1103499	28.255	87.648	Kosi	M(o)	1.53	5,730	3572	0271P1203572	28.070	87.632	Kosi	E(o)	1.68	5,482
3500	0271P1103500	28.252	87.655	Kosi	M(o)	2.14	5,633	3573	0271P1203573	28.068	87.501	Kosi	E(o)	0.66	4,739
3501	0271P1103501	28.250	87.621	Kosi	E(o)	7.44	5,840	3574	0271P1203574	28.064	87.628	Kosi	E(o)	3.87	5,360
3502	0271P1203502	28.249	87.527	Kosi	E(o)	0.25	5,192	3575	0271P1203575	28.060	87.502	Kosi	E(o)	1.41	4,932
3503	0271P1203503	28.249	87.658	Kosi	M(o)	1.32	5,588	3576	0271P1203576	28.060	87.530	Kosi	E(o)	1.35	4,843
3504	0271P1203504	28.248	87.599	Kosi	E(o)	8.90	5,731	3577	0271P1203577	28.057	87.622	Kosi	M(o)	1.09	5,143
3505	0271P1203505	28.247	87.527	Kosi	E(o)	4.71	5,186	3578	0271P1203578	28.052	87.548	Kosi	E(o)	0.29	5,081
3506	0271P1203506	28.242	87.547	Kosi	E(o)	1.88	5,167	3579	0271P1203579	28.052	87.627	Kosi	M(e)	18.40	5,066
3507	0271P1203507	28.239	87.659	Kosi	M(o)	0.84	5,636	3580	0271P1203580	28.051	87.504	Kosi	E(o)	1.00	4,962
3508	0271P1203508	28.237	87.616	Kosi	M(o)	0.74	5,707	3581	0271P1203581	28.049	87.621	Kosi	M(o)	0.40	5,231
3509	0271P1203509	28.237	87.619	Kosi	M(o)	1.06	5,707	3582	0271P1203582	28.048	87.581	Kosi	M(o)	7.25	4,716
3510	0271P1203510	28.236	87.501	Kosi	M(o)	20.48	5,225	3583	0271P1203583	28.046	87.517	Kosi	E(o)	1.12	4,922
3511	0271P1203511	28.236	87.659	Kosi	M(o)	3.59	5,594	3584	0271P1203584	28.045	87.536	Kosi	E(o)	1.33	4,889
3512	0271P1203512	28.234	87.604	Kosi	M(o)	0.63	5,606	3585	0271P1203585	28.044	87.626	Kosi	M(o)	3.17	5,206
3513	0271P1203513	28.234	87.607	Kosi	M(o)	3.02	5,618	3586	0271P1203586	28.020	87.584	Kosi	M(e)	2.56	4,783
3514	0271P1203514	28.230	87.591	Kosi	M(e)	78.90	5,410	3587	0271P1203587	28.019	87.501	Kosi	E(o)	1.28	4,752
3515	0271P1203515	28.229	87.558	Kosi	M(e)	6.80	5,340	3588	0271P1203588	28.018	87.572	Kosi	E(o)	0.45	4,961
3516	0271P1203516	28.228	87.578	Kosi	M(e)	21.94	5,247	3589	0271P1203589	28.014	87.607	Kosi	E(o)	1.54	5,206
3517	0271P1203517	28.224	87.582	Kosi	M(o)	2.09	5,309	3590	0271P1203590	28.013	87.526	Kosi	E(o)	0.64	4,686
3518	0271P1203518	28.222	87.574	Kosi	M(o)	6.13	5,394	3591	0271P1203591	28.013	87.611	Kosi	E(c)	2.19	5,076
3519	0271P1203519	28.219	87.534	Kosi	E(o)	0.97	5,317	3592	0271P1203592	28.013	87.607	Kosi	E(o)	0.54	5,204
3520	0271P1203520	28.211	87.533	Kosi	E(o)	5.54	5,222	3593	0271P1203593	28.012	87.510	Kosi	E(o)	1.47	4,898
3521	0271P1203521	28.206	87.560	Kosi	M(e)	15.95	5,337	3594	0271P1203594	28.010	87.520	Kosi	E(o)	1.73	4,730
3522	0271P1203522	28.202	87.504	Kosi	O	1.12	4,795	3595	0271P1203595	28.008	87.516	Kosi	E(o)	0.77	4,760
3523	0271P1203523	28.200	87.505	Kosi	O	1.49	4,804	3596	0271P1303596	28.752	87.937	Kosi	E(o)	0.55	5,598
3524	0271P1203524	28.195	87.641	Kosi	M(e)	47.42	5,352	3597	0271P1303597	27.961	87.928	Kosi	M(o)	2.17	5,103
3525	0271P1203525	28.188	87.505	Kosi	E(o)	3.85	5,143	3598	0271P1603598	28.078	87.854	Kosi	E(o)	3.49	5,546
3526	0271P1203526	28.180	87.508	Kosi	E(o)	0.85	5,219	3599	0271P1603599	28.036	87.856	Kosi	M(o)	0.45	5,759
3527	0271P1203527	28.178	87.563	Kosi	M(e)	104.19	5,011	3600	0271P1603600	28.035	87.858	Kosi	M(yo)	2.10	5,751
3528	0271P1203528	28.177	87.507	Kosi	E(o)	0.93	5,248	3601	0271P1603601	28.032	87.870	Kosi	M(o)	1.50	5,655
3529	0271P1203529	28.174	87.530	Kosi	E(o)	3.83	5,198	3602	0271P1603602	28.030	87.869	Kosi	M(o)	1.20	5,675
3530	0271P1203530	28.173	87.562	Kosi	M(o)	2.33	5,113	3603	0271P1603603	28.027	87.870	Kosi	M(o)	0.97	5,686
3531	0271P1203531	28.168	87.503	Kosi	E(o)	1.08	5,312	3604	0271P1603604	28.026	87.865	Kosi	M(o)	1.00	5,717

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
3605	0271P1603605	28.021	87.895	Kosi	M(o)	7.54	5,685	3678	0272I0603678	27.728	86.404	Kosi	E(o)	3.05	4,413
3606	0271P1603606	28.018	87.828	Kosi	E(o)	1.26	5,700	3679	0272I0603679	27.725	86.418	Kosi	E(o)	1.37	4,225
3607	0272E1303607	27.990	85.879	Kosi	E(o)	6.13	4,114	3680	0272I0603680	27.670	86.387	Kosi	E(o)	2.22	4,031
3608	0272I0103608	27.997	86.047	Kosi	E(o)	2.15	4,367	3681	0272I0903681	28.000	86.598	Kosi	I(s)	0.53	4,907
3609	0272I0103609	27.995	86.071	Kosi	M(o)	0.47	4,526	3682	0272I0903682	28.000	86.622	Kosi	I(s)	1.22	4,966
3610	0272I0103610	27.994	86.033	Kosi	E(o)	2.25	4,270	3683	0272I0903683	27.999	86.600	Kosi	I(s)	0.70	4,888
3611	0272I0103611	27.980	86.091	Kosi	E(o)	0.55	4,774	3684	0272I0903684	27.999	86.693	Kosi	I(s)	0.68	4,900
3612	0272I0103612	27.947	86.096	Kosi	M(o)	0.32	4,876	3685	0272I0903685	27.998	86.603	Kosi	I(s)	0.33	4,887
3613	0272I0103613	27.934	86.118	Kosi	E(o)	1.05	4,769	3686	0272I0903686	27.998	86.620	Kosi	I(s)	0.85	4,968
3614	0272I0103614	27.931	86.131	Kosi	E(o)	3.28	4,923	3687	0272I0903687	27.996	86.663	Kosi	M(o)	2.28	5,264
3615	0272I0103615	27.918	86.042	Kosi	E(o)	0.71	4,129	3688	0272I0903688	27.996	86.695	Kosi	I(s)	0.32	4,894
3616	0272I0103616	27.916	86.071	Kosi	E(o)	0.29	4,229	3689	0272I0903689	27.995	86.663	Kosi	M(o)	0.43	5,274
3617	0272I0103617	27.914	86.130	Kosi	E(o)	1.98	4,365	3690	0272I0903690	27.995	86.693	Kosi	I(s)	0.26	4,881
3618	0272I0103618	27.911	86.062	Kosi	E(o)	0.25	4,231	3691	0272I0903691	27.995	86.530	Kosi	M(o)	0.51	5,277
3619	0272I0103619	27.909	86.154	Kosi	E(o)	1.98	4,562	3692	0272I0903692	27.994	86.576	Kosi	M(o)	0.43	5,227
3620	0272I0103620	27.894	86.045	Kosi	E(o)	0.47	4,020	3693	0272I0903693	27.993	86.602	Kosi	I(s)	0.57	4,859
3621	0272I0103621	27.870	86.167	Kosi	E(o)	0.56	4,149	3694	0272I0903694	27.993	86.722	Kosi	I(s)	0.55	5,116
3622	0272I0503622	27.998	86.426	Kosi	E(o)	0.50	4,935	3695	0272I0903695	27.993	86.616	Kosi	I(s)	1.83	4,938
3623	0272I0503623	27.996	86.424	Kosi	E(o)	5.68	4,928	3696	0272I0903696	27.993	86.695	Kosi	I(s)	0.45	4,879
3624	0272I0503624	27.995	86.339	Kosi	M(o)	1.67	4,685	3697	0272I0903697	27.993	86.734	Kosi	I(s)	0.87	5,170
3625	0272I0503625	27.993	86.397	Kosi	M(l)	2.65	4,631	3698	0272I0903698	27.992	86.725	Kosi	I(s)	0.35	5,129
3626	0272I0503626	27.991	86.391	Kosi	I(s)	0.32	4,630	3699	0272I0903699	27.992	86.731	Kosi	I(s)	0.35	5,167
3627	0272I0503627	27.990	86.395	Kosi	I(s)	0.43	4,641	3700	0272I0903700	27.992	86.725	Kosi	I(s)	0.26	5,127
3628	0272I0503628	27.990	86.392	Kosi	I(s)	0.29	4,633	3701	0272I0903701	27.992	86.652	Kosi	M(o)	2.04	5,261
3629	0272I0503629	27.987	86.492	Kosi	M(o)	1.13	5,571	3702	0272I0903702	27.991	86.691	Kosi	I(s)	0.85	4,861
3630	0272I0503630	27.986	86.281	Kosi	E(o)	9.81	4,688	3703	0272I0903703	27.991	86.743	Kosi	I(s)	0.87	5,209
3631	0272I0503631	27.956	86.458	Kosi	I(s)	1.98	5,076	3704	0272I0903704	27.990	86.588	Kosi	E(o)	2.52	5,242
3632	0272I0503632	27.950	86.417	Kosi	M(e)	0.78	4,977	3705	0272I0903705	27.990	86.691	Kosi	I(s)	0.74	4,867
3633	0272I0503633	27.948	86.384	Kosi	M(o)	1.50	4,794	3706	0272I0903706	27.990	86.617	Kosi	M(o)	0.25	4,959
3634	0272I0503634	27.947	86.446	Kosi	M(e)	156.76	5,046	3707	0272I0903707	27.989	86.649	Kosi	M(o)	5.10	5,204
3635	0272I0503635	27.938	86.432	Kosi	M(o)	4.19	5,046	3708	0272I0903708	27.988	86.609	Kosi	M(o)	3.06	4,824
3636	0272I0503636	27.936	86.433	Kosi	M(o)	0.60	5,049	3709	0272I0903709	27.988	86.644	Kosi	M(o)	1.19	5,374
3637	0272I0503637	27.932	86.422	Kosi	M(o)	1.58	4,979	3710	0272I0903710	27.986	86.606	Kosi	I(s)	0.25	4,826
3638	0272I0503638	27.929	86.433	Kosi	M(o)	31.99	5,025	3711	0272I0903711	27.986	86.554	Kosi	I(s)	0.41	5,080
3639	0272I0503639	27.929	86.446	Kosi	M(o)	6.53	5,195	3712	0272I0903712	27.984	86.607	Kosi	I(s)	0.58	4,815
3640	0272I0503640	27.928	86.410	Kosi	E(o)	5.02	5,059	3713	0272I0903713	27.984	86.672	Kosi	E(o)	0.25	5,163
3641	0272I0503641	27.928	86.432	Kosi	M(o)	0.35	5,031	3714	0272I0903714	27.984	86.567	Kosi	M(o)	0.45	5,257
3642	0272I0503642	27.927	86.420	Kosi	M(o)	15.72	5,020	3715	0272I0903715	27.981	86.556	Kosi	I(s)	0.29	5,063
3643	0272I0503643	27.917	86.465	Kosi	M(o)	17.56	5,259	3716	0272I0903716	27.981	86.699	Kosi	I(s)	0.43	4,834
3644	0272I0503644	27.916	86.477	Kosi	M(o)	14.08	5,110	3717	0272I0903717	27.981	86.609	Kosi	M(o)	3.07	4,805
3645	0272I0503645	27.891	86.465	Kosi	M(l)	2.99	4,698	3718	0272I0903718	27.980	86.539	Kosi	M(o)	1.06	5,250
3646	0272I0503646	27.874	86.357	Kosi	E(o)	1.35	5,109	3719	0272I0903719	27.979	86.733	Kosi	M(o)	1.58	5,421
3647	0272I0503647	27.869	86.355	Kosi	E(o)	4.01	4,841	3720	0272I0903720	27.978	86.704	Kosi	M(o)	1.66	4,839
3648	0272I0503648	27.861	86.476	Kosi	M(e)	158.40	4,550	3721	0272I0903721	27.977	86.547	Kosi	M(o)	0.29	5,108
3649	0272I0503649	27.855	86.395	Kosi	E(o)	0.73	5,135	3722	0272I0903722	27.977	86.609	Kosi	M(o)	0.57	4,793
3650	0272I0503650	27.854	86.423	Kosi	M(o)	0.46	5,075	3723	0272I0903723	27.977	86.607	Kosi	M(o)	2.03	4,796
3651	0272I0503651	27.853	86.398	Kosi	E(o)	1.08	5,065	3724	0272I0903724	27.976	86.543	Kosi	M(o)	0.84	5,159
3652	0272I0503652	27.850	86.356	Kosi	E(o)	11.18	4,424	3725	0272I0903725	27.975	86.681	Kosi	M(l)	57.83	4,834
3653	0272I0503653	27.845	86.433	Kosi	M(o)	7.81	5,118	3726	0272I0903726	27.975	86.590	Kosi	E(o)	0.50	5,296
3654	0272I0503654	27.845	86.463	Kosi	M(o)	9.65	4,951	3727	0272I0903727	27.975	86.737	Kosi	M(o)	2.81	5,353
3655	0272I0503655	27.845	86.410	Kosi	M(o)	3.04	4,909	3728	0272I0903728	27.973	86.563	Kosi	M(o)	0.83	5,027
3656	0272I0503656	27.841	86.330	Kosi	O	0.28	4,281	3729	0272I0903729	27.972	86.557	Kosi	E(o)	0.98	5,077
3657	0272I0503657	27.835	86.482	Kosi	M(o)	2.31	4,844	3730	0272I0903730	27.971	86.635	Kosi	M(o)	1.69	5,061
3658	0272I0503658	27.830	86.494	Kosi	M(o)	0.61	5,073	3731	0272I0903731	27.970	86.588	Kosi	M(o)	1.53	5,200
3659	0272I0503659	27.809	86.448	Kosi	M(o)	0.27	4,908	3732	0272I0903732	27.970	86.654	Kosi	M(o)	1.97	5,116
3660	0272I0503660	27.805	86.458	Kosi	M(l)	0.30	4,887	3733	0272I0903733	27.969	86.746	Kosi	M(o)	0.45	5,164
3661	0272I0503661	27.803	86.459	Kosi	M(l)	0.51	4,886	3734	0272I0903734	27.967	86.732	Kosi	E(o)	0.56	5,325
3662	0272I0503662	27.802	86.471	Kosi	M(o)	0.30	4,970	3735	0272I0903735	27.965	86.677	Kosi	E(o)	0.82	5,151
3663	0272I0503663	27.802	86.427	Kosi	M(o)	0.51	5,002	3736	0272I0903736	27.961	86.696	Kosi	I(s)	2.03	4,745
3664	0272I0503664	27.801	86.470	Kosi	E(o)	1.55	4,955	3737	0272I0903737	27.961	86.700	Kosi	I(s)	0.43	4,774
3665	0272I0503665	27.799	86.395	Kosi	E(o)	1.83	4,802	3738	0272I0903738	27.961	86.663	Kosi	M(o)	2.06	5,164
3666	0272I0503666	27.798	86.478	Kosi	M(o)	4.51	4,963	3739	0272I0903739	27.958	86.661	Kosi	M(o)	4.84	5,155
3667	0272I0503667	27.794	86.424	Kosi	M(o)	1.98	4,999	3740	0272I0903740	27.955	86.567	Kosi	I(s)	1.06	4,867
3668	0272I0503668	27.784	86.400	Kosi	E(o)	1.17	4,870	3741	0272I0903741	27.954	86.697	Kosi	I(s)	0.35	4,741
3669	0272I0503669	27.782	86.431	Kosi	E(o)	0.43	5,076	3742	0272I0903742	27.954	86.699	Kosi	I(s)	0.67	4,727
3670	0272I0503670	27.782	86.389	Kosi	E(o)	3.03	4,756	3743	0272I0903743	27.954	86.701	Kosi	I(s)	0.46	4,737
3671	0272I0503671	27.779	86.383	Kosi	E(o)	2.67	4,839	3744	0272I0903744	27.953	86.649	Kosi	M(o)	0.90	5,354
3672	0272I0503672	27.778	86.392	Kosi	M(o)	1.17	4,836	3745	0272I0903745	27.953	86.705	Kosi	I(s)	0.74	4,738
3673	0272I0503673	27.777	86.391	Kosi	M(o)	2.18	4,841	3746	0272I0903746	27.952	86.565	Kosi	I(s)	1.98	4,871
3674	0272I0603674	27.750	86.419	Kosi	E(o)	3.26	4,834	3747	0272I0903747	27.952	86.553	Kosi	I(s)	0.25	4,955
3675	0272I0603675	27.748	86.422	Kosi	E(o)	0.25	4,931	3748	0272I0903748	27.951	86.700	Kosi	I(s)	0.71	4,741
3676	0272I0603676	27.746	86.495	Kosi	E(o)	1.10	4,440	3749	0272I0903749	27.951	86.690	Kosi	M(l)	42.11	4,741
3677	0272I0603677	27.731	86.421	Kosi	E(o)	4.29	4,505	3750	0272I0903750	27.951	86.709	Kosi	I(s)	0.66	4,724

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
3751	02072I0903751	27.950	86.572	Kosi	I(s)	0.57	4,867	3824	02072I1003824	27.697	86.577	Kosi	E(o)	0.31	4,653
3752	02072I0903752	27.946	86.651	Kosi	M(o)	6.81	5,132	3825	02072I1003825	27.697	86.592	Kosi	M(o)	0.57	4,419
3753	02072I0903753	27.946	86.670	Kosi	M(o)	0.66	5,163	3826	02072I1003826	27.696	86.551	Kosi	E(o)	0.26	4,819
3754	02072I0903754	27.945	86.704	Kosi	I(s)	0.31	4,716	3827	02072I1003827	27.696	86.576	Kosi	E(o)	0.30	4,666
3755	02072I0903755	27.944	86.670	Kosi	M(o)	0.55	5,199	3828	02072I1003828	27.695	86.574	Kosi	E(o)	0.52	4,680
3756	02072I0903756	27.944	86.549	Kosi	M(o)	5.50	5,192	3829	02072I1003829	27.695	86.571	Kosi	E(o)	0.78	4,687
3757	02072I0903757	27.943	86.554	Kosi	M(o)	1.39	5,134	3830	02072I1003830	27.693	86.549	Kosi	E(o)	2.10	4,704
3758	02072I0903758	27.943	86.710	Kosi	I(s)	8.26	4,724	3831	02072I1003831	27.691	86.605	Kosi	E(o)	0.78	4,688
3759	02072I0903759	27.941	86.699	Kosi	M(l)	18.00	4,709	3832	02072I1003832	27.690	86.532	Kosi	E(o)	0.60	4,504
3760	02072I0903760	27.941	86.714	Kosi	I(s)	1.89	4,711	3833	02072I1003833	27.687	86.550	Kosi	E(o)	0.66	4,669
3761	02072I0903761	27.940	86.708	Kosi	I(s)	2.46	4,712	3834	02072I1003834	27.686	86.554	Kosi	E(o)	1.48	4,604
3762	02072I0903762	27.938	86.711	Kosi	I(s)	9.83	4,706	3835	02072I1003835	27.686	86.580	Kosi	E(o)	0.30	4,626
3763	02072I0903763	27.937	86.715	Kosi	M(o)	0.35	4,706	3836	02072I1003836	27.685	86.570	Kosi	E(o)	1.42	4,736
3764	02072I0903764	27.936	86.713	Kosi	I(s)	1.36	4,705	3837	02072I1003837	27.685	86.543	Kosi	E(o)	0.83	4,611
3765	02072I0903765	27.934	86.712	Kosi	M(o)	0.49	4,711	3838	02072I1003838	27.685	86.627	Kosi	E(o)	0.68	4,542
3766	02072I0903766	27.934	86.706	Kosi	E(o)	0.74	4,669	3839	02072I1003839	27.682	86.601	Kosi	E(o)	1.26	4,528
3767	02072I0903767	27.934	86.648	Kosi	E(o)	2.14	4,900	3840	02072I1003840	27.680	86.543	Kosi	E(o)	2.09	4,492
3768	02072I0903768	27.933	86.746	Kosi	M(e)	7.56	4,948	3841	02072I1003841	27.679	86.574	Kosi	M(o)	0.87	4,566
3769	02072I0903769	27.932	86.647	Kosi	E(o)	1.06	4,897	3842	02072I1003842	27.677	86.545	Kosi	E(o)	3.02	4,462
3770	02072I0903770	27.932	86.713	Kosi	M(o)	0.71	4,697	3843	02072I1003843	27.676	86.564	Kosi	E(o)	0.39	4,521
3771	02072I0903771	27.930	86.715	Kosi	M(o)	0.67	4,692	3844	02072I1003844	27.675	86.564	Kosi	E(o)	0.48	4,530
3772	02072I0903772	27.928	86.714	Kosi	M(o)	0.25	4,690	3845	02072I1003845	27.674	86.609	Kosi	E(o)	7.28	4,396
3773	02072I0903773	27.921	86.675	Kosi	M(o)	2.72	5,259	3846	02072I1003846	27.672	86.542	Kosi	E(o)	0.38	4,532
3774	02072I0903774	27.920	86.745	Kosi	M(o)	2.48	4,864	3847	02072I1003847	27.672	86.534	Kosi	E(o)	1.41	4,434
3775	02072I0903775	27.909	86.580	Kosi	M(o)	1.73	5,098	3848	02072I1003848	27.672	86.541	Kosi	E(o)	0.60	4,537
3776	02072I0903776	27.908	86.585	Kosi	M(o)	0.59	5,254	3849	02072I1003849	27.669	86.605	Kosi	E(o)	0.84	4,260
3777	02072I0903777	27.907	86.587	Kosi	E(o)	0.36	5,224	3850	02072I1003850	27.668	86.518	Kosi	E(o)	0.38	4,148
3778	02072I0903778	27.907	86.588	Kosi	E(o)	0.25	5,215	3851	02072I1003851	27.667	86.547	Kosi	E(o)	1.11	4,324
3779	02072I0903779	27.905	86.581	Kosi	M(o)	2.14	5,037	3852	02072I1003852	27.666	86.527	Kosi	E(o)	2.53	4,339
3780	02072I0903780	27.901	86.576	Kosi	M(o)	2.76	5,160	3853	02072I1003853	27.666	86.565	Kosi	E(o)	0.44	4,423
3781	02072I0903781	27.880	86.568	Kosi	M(o)	0.50	5,071	3854	02072I1003854	27.664	86.615	Kosi	E(o)	0.40	4,448
3782	02072I0903782	27.880	86.608	Kosi	E(o)	0.37	4,763	3855	02072I1003855	27.664	86.544	Kosi	E(o)	0.54	4,356
3783	02072I0903783	27.874	86.586	Kosi	M(e)	40.18	4,368	3856	02072I1003856	27.663	86.538	Kosi	E(o)	1.16	4,335
3784	02072I0903784	27.873	86.685	Kosi	E(o)	1.77	4,919	3857	02072I1003857	27.655	86.614	Kosi	E(o)	0.96	4,228
3785	02072I0903785	27.857	86.500	Kosi	M(l)	2.47	5,335	3858	02072I1003858	27.654	86.519	Kosi	E(o)	0.62	4,201
3786	02072I0903786	27.840	86.568	Kosi	M(o)	0.39	5,082	3859	02072I1003859	27.654	86.567	Kosi	E(o)	0.28	4,213
3787	02072I0903787	27.840	86.630	Kosi	E(o)	1.15	4,467	3860	02072I1003860	27.650	86.580	Kosi	E(o)	1.12	4,248
3788	02072I0903788	27.836	86.585	Kosi	M(o)	1.61	5,136	3861	02072I1003861	27.648	86.521	Kosi	E(o)	1.24	4,308
3789	02072I0903789	27.833	86.565	Kosi	M(o)	2.69	4,943	3862	02072I1303862	28.000	86.995	Kosi	I(s)	0.97	5,369
3790	02072I0903790	27.828	86.573	Kosi	M(o)	3.97	4,754	3863	02072I1303863	27.999	86.998	Kosi	I(s)	0.47	5,333
3791	02072I0903791	27.826	86.569	Kosi	M(l)	4.76	4,788	3864	02072I1303864	27.997	86.835	Kosi	M(o)	11.55	5,321
3792	02072I0903792	27.823	86.571	Kosi	M(e)	3.79	4,768	3865	02072I1303865	27.996	86.823	Kosi	M(o)	0.35	5,400
3793	02072I0903793	27.795	86.617	Kosi	M(o)	1.75	5,182	3866	02072I1303866	27.996	86.820	Kosi	M(o)	1.15	5,356
3794	02072I0903794	27.791	86.621	Kosi	M(o)	46.73	5,157	3867	02072I1303867	27.993	86.838	Kosi	M(o)	1.68	5,298
3795	02072I0903795	27.789	86.613	Kosi	M(o)	0.57	5,199	3868	02072I1303868	27.993	86.844	Kosi	I(s)	0.48	5,232
3796	02072I0903796	27.788	86.632	Kosi	M(o)	4.68	5,210	3869	02072I1303869	27.993	86.996	Kosi	I(s)	0.64	5,340
3797	02072I0903797	27.786	86.632	Kosi	M(o)	2.47	5,095	3870	02072I1303870	27.992	86.762	Kosi	I(s)	0.35	5,334
3798	02072I0903798	27.783	86.628	Kosi	M(o)	1.62	4,981	3871	02072I1303871	27.984	86.844	Kosi	I(s)	0.29	5,183
3799	02072I0903799	27.782	86.627	Kosi	M(o)	0.52	4,979	3872	02072I1303872	27.984	86.845	Kosi	I(s)	0.27	5,183
3800	02072I0903800	27.781	86.589	Kosi	M(o)	1.11	5,054	3873	02072I1303873	27.984	86.988	Kosi	I(s)	1.65	5,403
3801	02072I0903801	27.779	86.612	Kosi	M(e)	117.31	4,831	3874	02072I1303874	27.982	86.782	Kosi	M(o)	1.15	5,360
3802	02072I0903802	27.778	86.643	Kosi	M(o)	29.27	5,163	3875	02072I1303875	27.982	86.785	Kosi	I(s)	0.55	5,372
3803	02072I0903803	27.777	86.681	Kosi	E(o)	0.54	4,528	3876	02072I1303876	27.979	86.822	Kosi	I(s)	0.52	5,170
3804	02072I0903804	27.772	86.645	Kosi	M(o)	1.69	5,189	3877	02072I1303877	27.979	86.820	Kosi	I(s)	0.33	5,165
3805	02072I0903805	27.750	86.523	Kosi	M(e)	2.47	4,111	3878	02072I1303878	27.978	86.818	Kosi	I(s)	0.37	5,185
3806	02072I1003806	27.728	86.569	Kosi	M(o)	2.95	5,002	3879	02072I1303879	27.976	86.811	Kosi	I(s)	0.53	5,184
3807	02072I1003807	27.723	86.602	Kosi	M(o)	0.89	4,955	3880	02072I1303880	27.976	86.810	Kosi	I(s)	0.34	5,194
3808	02072I1003808	27.715	86.537	Kosi	E(o)	0.37	4,881	3881	02072I1303881	27.975	86.804	Kosi	I(s)	24.84	5,183
3809	02072I1003809	27.713	86.542	Kosi	E(o)	8.99	4,940	3882	02072I1303882	27.974	86.794	Kosi	I(s)	1.24	5,211
3810	02072I1003810	27.712	86.571	Kosi	E(o)	1.16	4,900	3883	02072I1303883	27.969	86.828	Kosi	I(s)	0.42	5,029
3811	02072I1003811	27.711	86.599	Kosi	M(l)	7.73	4,607	3884	02072I1303884	27.966	86.829	Kosi	I(s)	0.61	5,024
3812	02072I1003812	27.711	86.565	Kosi	M(o)	0.66	4,973	3885	02072I1303885	27.965	86.807	Kosi	M(o)	0.60	5,211
3813	02072I1003813	27.710	86.590	Kosi	M(o)	3.26	4,638	3886	02072I1303886	27.963	86.812	Kosi	E(o)	1.57	5,068
3814	02072I1003814	27.709	86.563	Kosi	M(o)	2.57	4,870	3887	02072I1303887	27.962	86.774	Kosi	M(o)	3.37	5,100
3815	02072I1003815	27.708	86.597	Kosi	M(o)	0.73	4,546	3888	02072I1303888	27.961	86.828	Kosi	I(s)	0.49	4,989
3816	02072I1003816	27.707	86.585	Kosi	M(o)	0.61	4,742	3889	02072I1303889	27.960	86.831	Kosi	M(l)	1.97	5,047
3817	02072I1003817	27.703	86.559	Kosi	E(o)	8.24	4,803	3890	02072I1303890	27.956	86.806	Kosi	M(o)	1.26	4,994
3818	02072I1003818	27.703	86.605	Kosi	E(o)	1.15	4,637	3891	02072I1303891	27.956	86.822	Kosi	I(s)	0.31	4,954
3819	02072I1003819	27.701	86.572	Kosi	E(o)	3.98	4,718	3892	02072I1303892	27.955	86.823	Kosi	I(s)	0.72	4,956
3820	02072I1003820	27.700	86.609	Kosi	E(o)	0.50	4,725	3893	02072I1303893	27.954	86.825	Kosi	I(s)	0.34	4,945
3821	02072I1003821	27.700	86.608	Kosi	E(o)	0.91	4,739	3894	02072I1303894	27.954	86.778	Kosi	M(l)	0.25	5,046
3822	02072I1003822	27.699	86.526	Kosi	E(o)	6.05	4,391	3895	02072I1303895	27.953	86.769	Kosi	E(o)	0.82	5,048
3823	02072I1003823	27.697	86.560	Kosi	E(o)	0.47	4,866	3896	02072I1303896	27.953	86.811	Kosi	M(o)	0.32	5,009

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
3897	0272I1303897	27.951	86.777	Kosi	M(e)	3.67	5,010	3970	0272I1303970	27.878	86.881	Kosi	I(s)	0.25	4,969
3898	0272I1303898	27.950	86.782	Kosi	M(o)	3.65	5,028	3971	0272I1303971	27.876	86.880	Kosi	I(s)	0.98	5,004
3899	0272I1303899	27.950	86.855	Kosi	M(o)	0.99	5,434	3972	0272I1303972	27.873	86.878	Kosi	I(s)	0.58	5,017
3900	0272I1303900	27.950	86.822	Kosi	I(s)	2.94	4,936	3973	0272I1303973	27.871	86.881	Kosi	I(s)	0.36	5,025
3901	0272I1303901	27.949	86.858	Kosi	M(o)	0.96	5,444	3974	0272I1303974	27.868	86.877	Kosi	I(s)	0.27	5,081
3902	0272I1303902	27.946	86.804	Kosi	E(o)	0.48	4,952	3975	0272I1303975	27.860	86.926	Kosi	M(o)	2.92	5,471
3903	0272I1303903	27.945	86.818	Kosi	I(s)	1.54	4,945	3976	0272I1303976	27.858	86.926	Kosi	M(o)	0.38	5,468
3904	0272I1303904	27.944	86.824	Kosi	M(o)	1.68	4,929	3977	0272I1303977	27.857	86.937	Kosi	M(o)	21.45	5,473
3905	0272I1303905	27.943	86.864	Kosi	I(s)	0.28	5,267	3978	0272I1303978	27.857	86.918	Kosi	M(o)	7.38	5,418
3906	0272I1303906	27.943	86.771	Kosi	E(o)	0.39	4,839	3979	0272I1303979	27.850	86.928	Kosi	M(o)	48.86	5,411
3907	0272I1303907	27.942	86.816	Kosi	I(s)	1.39	4,936	3980	0272I1303980	27.848	86.857	Kosi	M(o)	1.37	5,337
3908	0272I1303908	27.942	86.813	Kosi	I(s)	0.26	4,940	3981	0272I1303981	27.840	86.951	Kosi	M(o)	6.94	5,430
3909	0272I1303909	27.941	86.801	Kosi	E(o)	0.57	4,882	3982	0272I1303982	27.838	86.875	Kosi	M(o)	3.63	5,329
3910	0272I1303910	27.939	86.815	Kosi	I(s)	2.89	4,939	3983	0272I1303983	27.837	86.935	Kosi	M(e)	29.39	5,209
3911	0272I1303911	27.938	86.847	Kosi	M(o)	0.91	5,351	3984	0272I1303984	27.836	86.958	Kosi	M(o)	4.01	5,554
3912	0272I1303912	27.936	86.813	Kosi	M(o)	0.37	4,908	3985	0272I1303985	27.834	86.909	Kosi	M(o)	1.32	5,400
3913	0272I1303913	27.935	86.811	Kosi	M(o)	0.33	4,919	3986	0272I1303986	27.832	86.917	Kosi	M(o)	33.07	5,360
3914	0272I1303914	27.934	86.890	Kosi	I(s)	0.27	5,133	3987	0272I1303987	27.828	86.914	Kosi	M(o)	5.55	5,358
3915	0272I1303915	27.933	86.891	Kosi	I(s)	0.27	5,130	3988	0272I1303988	27.825	86.933	Kosi	M(o)	1.91	5,182
3916	0272I1303916	27.933	86.887	Kosi	I(s)	0.27	5,136	3989	0272I1303989	27.824	86.927	Kosi	M(o)	7.09	5,240
3917	0272I1303917	27.933	86.809	Kosi	M(o)	0.42	4,906	3990	0272I1303990	27.824	86.933	Kosi	M(o)	0.45	5,187
3918	0272I1303918	27.933	86.840	Kosi	E(o)	0.31	5,461	3991	0272I1303991	27.822	86.934	Kosi	M(o)	2.95	5,184
3919	0272I1303919	27.932	86.844	Kosi	M(o)	0.48	5,466	3992	0272I1303992	27.821	86.910	Kosi	M(o)	2.15	5,471
3920	0272I1303920	27.931	86.840	Kosi	M(o)	0.33	5,430	3993	0272I1303993	27.821	86.960	Kosi	M(o)	4.22	5,450
3921	0272I1303921	27.930	86.952	Kosi	I(s)	0.33	5,321	3994	0272I1303994	27.819	86.936	Kosi	M(o)	0.25	5,180
3922	0272I1303922	27.930	86.840	Kosi	M(o)	0.46	5,426	3995	0272I1303995	27.818	86.955	Kosi	M(e)	7.16	5,440
3923	0272I1303923	27.929	86.921	Kosi	I(s)	0.50	5,152	3996	0272I1303996	27.817	86.937	Kosi	M(o)	2.63	5,178
3924	0272I1303924	27.929	86.872	Kosi	M(l)	0.25	5,190	3997	0272I1303997	27.817	86.935	Kosi	M(o)	0.36	5,186
3925	0272I1303925	27.929	86.858	Kosi	E(o)	1.54	5,216	3998	0272I1303998	27.816	86.953	Kosi	M(o)	0.34	5,432
3926	0272I1303926	27.929	86.838	Kosi	M(o)	3.22	5,444	3999	0272I1303999	27.811	86.844	Kosi	M(o)	6.37	5,541
3927	0272I1303927	27.927	86.915	Kosi	I(s)	0.81	5,131	4000	0272I1304000	27.805	86.974	Kosi	M(e)	16.77	5,516
3928	0272I1303928	27.926	86.920	Kosi	I(s)	0.35	5,138	4001	0272I1304001	27.804	86.918	Kosi	M(o)	0.31	5,404
3929	0272I1303929	27.926	86.838	Kosi	M(o)	0.34	5,498	4002	0272I1304002	27.803	86.984	Kosi	M(o)	1.09	5,591
3930	0272I1303930	27.925	86.917	Kosi	I(s)	0.25	5,124	4003	0272I1304003	27.802	86.980	Kosi	M(o)	0.34	5,563
3931	0272I1303931	27.924	86.921	Kosi	I(s)	0.26	5,130	4004	0272I1304004	27.799	86.966	Kosi	M(e)	21.36	5,396
3932	0272I1303932	27.924	86.786	Kosi	M(l)	54.85	4,512	4005	0272I1304005	27.796	86.942	Kosi	O	6.92	5,053
3933	0272I1303933	27.923	86.912	Kosi	I(s)	0.93	5,096	4006	0272I1304006	27.795	86.877	Kosi	M(o)	1.67	5,317
3934	0272I1303934	27.923	86.889	Kosi	I(s)	0.27	5,035	4007	0272I1304007	27.794	86.911	Kosi	M(o)	18.87	5,274
3935	0272I1303935	27.919	86.908	Kosi	I(s)	0.56	5,069	4008	0272I1304008	27.793	86.838	Kosi	M(o)	22.89	5,351
3936	0272I1303936	27.915	86.866	Kosi	M(o)	0.83	4,998	4009	0272I1304009	27.793	86.957	Kosi	M(o)	0.28	5,355
3937	0272I1303937	27.914	86.867	Kosi	I(s)	1.13	4,994	4010	0272I1304010	27.790	86.910	Kosi	I(s)	0.28	5,265
3938	0272I1303938	27.914	86.883	Kosi	M(o)	0.37	4,974	4011	0272I1304011	27.790	86.837	Kosi	M(o)	0.75	5,317
3939	0272I1303939	27.913	86.910	Kosi	I(s)	0.41	5,028	4012	0272I1304012	27.789	86.849	Kosi	M(o)	0.68	5,416
3940	0272I1303940	27.913	86.950	Kosi	I(s)	0.52	5,174	4013	0272I1304013	27.789	86.877	Kosi	M(o)	0.41	5,111
3941	0272I1303941	27.912	86.952	Kosi	I(s)	0.25	5,170	4014	0272I1304014	27.783	86.957	Kosi	M(e)	87.28	5,198
3942	0272I1303942	27.911	86.900	Kosi	I(s)	1.07	5,006	4015	0272I1304015	27.778	86.867	Kosi	I(s)	3.68	4,962
3943	0272I1303943	27.908	86.905	Kosi	I(s)	0.46	4,999	4016	0272I1304016	27.775	86.866	Kosi	I(s)	0.44	4,966
3944	0272I1303944	27.907	86.947	Kosi	I(s)	0.26	5,131	4017	0272I1304017	27.775	86.797	Kosi	I(s)	0.27	4,691
3945	0272I1303945	27.906	86.902	Kosi	I(s)	0.34	4,989	4018	0272I1304018	27.774	86.868	Kosi	I(s)	0.49	4,962
3946	0272I1303946	27.904	86.902	Kosi	I(s)	0.25	4,995	4019	0272I1304019	27.773	86.867	Kosi	I(s)	0.39	4,969
3947	0272I1303947	27.901	86.944	Kosi	I(s)	0.28	5,084	4020	0272I1304020	27.772	86.869	Kosi	I(s)	0.43	4,937
3948	0272I1303948	27.901	86.912	Kosi	M(o)	0.57	5,008	4021	0272I1304021	27.771	86.869	Kosi	I(s)	0.26	4,944
3949	0272I1303949	27.900	86.909	Kosi	M(o)	3.28	5,011	4022	0272I1304022	27.771	86.871	Kosi	I(s)	1.02	4,946
3950	0272I1303950	27.898	86.925	Kosi	M(e)	139.77	5,003	4023	0272I1304023	27.768	86.926	Kosi	M(o)	0.57	5,150
3951	0272I1303951	27.897	86.797	Kosi	M(o)	1.28	5,064	4024	0272I1304024	27.766	86.871	Kosi	I(s)	13.68	4,931
3952	0272I1303952	27.894	86.913	Kosi	E(c)	11.28	4,986	4025	0272I1304025	27.766	86.799	Kosi	M(o)	0.25	4,588
3953	0272I1303953	27.891	86.935	Kosi	I(s)	0.58	5,074	4026	0272I1304026	27.764	86.876	Kosi	M(l)	0.58	5,029
3954	0272I1303954	27.891	86.793	Kosi	M(o)	3.64	5,143	4027	0272I1304027	27.762	86.870	Kosi	M(o)	0.31	4,938
3955	0272I1303955	27.890	86.768	Kosi	I(s)	0.40	5,057	4028	0272I1304028	27.760	86.863	Kosi	M(e)	6.75	5,119
3956	0272I1303956	27.889	86.879	Kosi	I(s)	0.37	4,875	4029	0272I1304029	27.760	86.922	Kosi	M(o)	1.15	5,314
3957	0272I1303957	27.889	86.841	Kosi	M(o)	0.46	4,660	4030	0272I1304030	27.759	86.875	Kosi	M(o)	4.84	4,921
3958	0272I1303958	27.889	86.929	Kosi	E(o)	0.59	5,224	4031	0272I1304031	27.757	86.888	Kosi	M(o)	7.01	5,104
3959	0272I1303959	27.887	86.781	Kosi	M(o)	0.57	5,199	4032	0272I1304032	27.755	86.958	Kosi	M(o)	86.50	4,927
3960	0272I1303960	27.887	86.935	Kosi	I(s)	0.34	5,110	4033	0272I1304033	27.754	86.871	Kosi	M(o)	0.32	4,885
3961	0272I1303961	27.887	86.844	Kosi	M(o)	4.44	4,675	4034	0272I1304034	27.754	86.943	Kosi	M(o)	0.50	4,941
3962	0272I1303962	27.887	86.897	Kosi	M(o)	5.35	5,141	4035	0272I1404035	27.747	86.870	Kosi	E(o)	1.42	4,869
3963	0272I1303963	27.885	86.894	Kosi	M(o)	0.74	5,109	4036	0272I1404036	27.743	86.929	Kosi	E(o)	0.92	4,812
3964	0272I1303964	27.885	86.781	Kosi	M(o)	0.51	5,175	4037	0272I1404037	27.743	86.844	Kosi	M(e)	25.73	4,362
3965	0272I1303965	27.885	86.757	Kosi	E(o)	0.46	5,124	4038	0272I1404038	27.742	86.886	Kosi	M(o)	0.30	5,169
3966	0272I1303966	27.884	86.891	Kosi	M(o)	1.38	5,046	4039	0272I1404039	27.742	86.875	Kosi	E(o)	0.34	4,780
3967	0272I1303967	27.880	86.854	Kosi	I(s)	0.56	4,807	4040	0272I1404040	27.739	86.822	Kosi	M(o)	0.31	4,715
3968	0272I1303968	27.879	86.892	Kosi	M(o)	0.50	5,131	4041	0272I1404041	27.737	86.872	Kosi	M(e)	0.52	4,729
3969	0272I1303969	27.879	86.934	Kosi	I(s)	0.34	5,217	4042	0272I1404042	27.737	86.821	Kosi	M(e)	0.46	4,629

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
4043	0272I1404043	27.736	86.876	Kosi	M(o)	1.16	4,735	4116	0272M0104116	27.834	87.100	Kosi	M(o)	2.81	5,314
4044	0272I1404044	27.735	86.850	Kosi	M(o)	0.26	4,512	4117	0272M0104117	27.832	87.103	Kosi	M(o)	3.25	5,302
4045	0272I1404045	27.730	86.904	Kosi	E(o)	0.31	5,129	4118	0272M0104118	27.829	87.095	Kosi	M(o)	12.06	5,225
4046	0272I1404046	27.725	86.900	Kosi	M(o)	3.02	5,204	4119	0272M0104119	27.829	87.065	Kosi	M(o)	5.55	4,821
4047	0272I1404047	27.721	86.907	Kosi	M(o)	1.51	5,017	4120	0272M0104120	27.828	87.068	Kosi	M(o)	2.00	4,818
4048	0272I1404048	27.719	86.910	Kosi	M(o)	14.93	4,989	4121	0272M0104121	27.826	87.070	Kosi	M(o)	0.60	4,806
4049	0272I1404049	27.714	86.916	Kosi	M(o)	6.46	5,100	4122	0272M0104122	27.813	87.139	Kosi	M(e)	9.27	4,790
4050	0272I1404050	27.711	86.928	Kosi	E(o)	0.33	4,734	4123	0272M0104123	27.808	87.147	Kosi	M(o)	4.99	4,974
4051	0272I1404051	27.711	86.977	Kosi	M(e)	6.30	4,643	4124	0272M0104124	27.804	87.131	Kosi	M(o)	1.11	4,619
4052	0272I1404052	27.696	86.792	Kosi	M(o)	12.95	4,951	4125	0272M0104125	27.798	87.092	Kosi	M(e)	182.16	4,543
4053	0272I1404053	27.694	86.858	Kosi	M(o)	0.61	4,945	4126	0272M0104126	27.795	87.114	Kosi	M(o)	1.19	4,521
4054	0272I1404054	27.693	86.921	Kosi	M(o)	1.15	5,022	4127	0272M0104127	27.760	87.237	Kosi	E(c)	1.18	4,176
4055	0272I1404055	27.687	86.858	Kosi	M(e)	31.80	4,764	4128	0272M0204128	27.716	87.065	Kosi	E(o)	3.01	3,993
4056	0272I1404056	27.681	86.853	Kosi	E(o)	11.85	4,694	4129	0272M0204129	27.707	87.236	Kosi	E(c)	0.43	4,103
4057	0272I1404057	27.679	86.794	Kosi	M(o)	1.25	4,981	4130	0272M0204130	27.701	87.087	Kosi	E(o)	0.63	4,392
4058	0272I1404058	27.677	86.853	Kosi	E(o)	0.36	4,771	4131	0272M0204131	27.698	87.069	Kosi	E(o)	6.03	3,772
4059	0272I1404059	27.648	86.854	Kosi	M(o)	5.08	4,350	4132	0272M0204132	27.691	87.206	Kosi	E(c)	11.49	4,088
4060	0272I1404060	27.648	86.850	Kosi	M(o)	0.40	4,350	4133	0272M0204133	27.647	87.069	Kosi	E(o)	0.80	4,166
4061	0272I1404061	27.637	86.983	Kosi	E(c)	7.04	4,702	4134	0272M0204134	27.645	87.050	Kosi	E(c)	2.36	4,369
4062	0272I1404062	27.626	86.862	Kosi	E(o)	1.00	4,860	4135	0272M0204135	27.629	87.051	Kosi	E(o)	1.61	4,185
4063	0272I1404063	27.624	86.849	Kosi	E(o)	1.28	4,526	4136	0272M0204136	27.625	87.055	Kosi	E(o)	0.69	4,293
4064	0272I1404064	27.611	86.847	Kosi	E(o)	0.92	4,331	4137	0272M0504137	28.000	87.470	Kosi	E(o)	1.27	4,791
4065	0272I1404065	27.610	86.844	Kosi	E(o)	2.03	4,276	4138	0272M0504138	28.000	87.256	Kosi	E(o)	0.78	4,737
4066	0272I1404066	27.609	86.849	Kosi	E(o)	9.46	4,331	4139	0272M0504139	27.999	87.491	Kosi	E(o)	0.85	4,787
4067	0272M0104067	27.999	87.122	Kosi	E(o)	2.00	4,875	4140	0272M0504140	27.997	87.477	Kosi	E(c)	7.95	4,416
4068	0272M0104068	27.998	87.006	Kosi	I(s)	0.70	5,310	4141	0272M0504141	27.997	87.466	Kosi	E(o)	1.04	4,559
4069	0272M0104069	27.995	87.182	Kosi	E(o)	0.35	4,418	4142	0272M0504142	27.995	87.255	Kosi	E(o)	2.54	4,705
4070	0272M0104070	27.994	87.189	Kosi	E(o)	0.76	4,551	4143	0272M0504143	27.994	87.466	Kosi	E(o)	0.63	4,592
4071	0272M0104071	27.993	87.196	Kosi	E(o)	0.52	4,532	4144	0272M0504144	27.993	87.305	Kosi	E(c)	1.05	4,767
4072	0272M0104072	27.993	87.132	Kosi	E(o)	1.21	4,734	4145	0272M0504145	27.990	87.282	Kosi	E(o)	0.69	4,851
4073	0272M0104073	27.993	87.124	Kosi	E(o)	3.77	4,769	4146	0272M0504146	27.988	87.252	Kosi	E(o)	0.52	4,612
4074	0272M0104074	27.992	87.182	Kosi	E(o)	1.31	4,415	4147	0272M0504147	27.987	87.305	Kosi	E(o)	0.97	4,555
4075	0272M0104075	27.992	87.056	Kosi	M(l)	0.32	5,106	4148	0272M0504148	27.985	87.268	Kosi	E(o)	0.99	4,826
4076	0272M0104076	27.992	87.015	Kosi	I(s)	0.45	5,264	4149	0272M0504149	27.983	87.303	Kosi	E(o)	0.99	4,526
4077	0272M0104077	27.991	87.002	Kosi	I(s)	0.34	5,319	4150	0272M0504150	27.983	87.345	Kosi	E(o)	26.18	3,728
4078	0272M0104078	27.989	87.204	Kosi	E(o)	7.74	4,314	4151	0272M0504151	27.982	87.266	Kosi	E(o)	7.68	4,782
4079	0272M0104079	27.988	87.243	Kosi	E(o)	0.96	4,454	4152	0272M0504152	27.982	87.258	Kosi	E(o)	9.79	4,718
4080	0272M0104080	27.987	87.247	Kosi	E(o)	4.16	4,563	4153	0272M0504153	27.981	87.303	Kosi	E(o)	0.53	4,520
4081	0272M0104081	27.987	87.051	Kosi	I(s)	0.52	5,069	4154	0272M0504154	27.975	87.270	Kosi	E(o)	1.19	4,866
4082	0272M0104082	27.987	87.041	Kosi	I(s)	0.89	5,124	4155	0272M0504155	27.974	87.280	Kosi	E(c)	9.08	4,795
4083	0272M0104083	27.986	87.026	Kosi	I(s)	0.39	5,207	4156	0272M0504156	27.973	87.267	Kosi	E(o)	0.39	4,840
4084	0272M0104084	27.986	87.070	Kosi	I(s)	0.92	4,951	4157	0272M0504157	27.972	87.348	Kosi	E(o)	3.84	3,963
4085	0272M0104085	27.985	87.082	Kosi	I(s)	1.42	4,884	4158	0272M0504158	27.969	87.255	Kosi	E(o)	3.01	4,677
4086	0272M0104086	27.985	87.052	Kosi	I(s)	0.40	5,084	4159	0272M0504159	27.968	87.277	Kosi	E(o)	0.38	4,711
4087	0272M0104087	27.978	87.026	Kosi	E(o)	2.00	5,354	4160	0272M0504160	27.966	87.268	Kosi	E(o)	1.18	4,727
4088	0272M0104088	27.978	87.121	Kosi	M(l)	0.82	4,573	4161	0272M0504161	27.965	87.257	Kosi	E(c)	6.38	4,649
4089	0272M0104089	27.965	87.235	Kosi	E(o)	1.67	4,227	4162	0272M0504162	27.965	87.481	Kosi	E(o)	0.97	4,340
4090	0272M0104090	27.964	87.242	Kosi	E(o)	2.63	4,409	4163	0272M0504163	27.963	87.266	Kosi	E(o)	0.27	4,728
4091	0272M0104091	27.964	87.055	Kosi	E(o)	1.01	5,684	4164	0272M0504164	27.963	87.274	Kosi	E(o)	0.42	4,652
4092	0272M0104092	27.961	87.244	Kosi	E(o)	1.69	4,468	4165	0272M0504165	27.963	87.485	Kosi	E(o)	0.55	4,384
4093	0272M0104093	27.959	87.247	Kosi	E(c)	12.02	4,457	4166	0272M0504166	27.963	87.486	Kosi	E(o)	0.27	4,380
4094	0272M0104094	27.956	87.235	Kosi	E(o)	0.26	4,534	4167	0272M0504167	27.961	87.257	Kosi	E(o)	1.97	4,647
4095	0272M0104095	27.954	87.234	Kosi	E(o)	0.49	4,503	4168	0272M0504168	27.961	87.267	Kosi	E(o)	0.61	4,666
4096	0272M0104096	27.949	87.238	Kosi	E(o)	1.64	4,440	4169	0272M0504169	27.960	87.485	Kosi	E(o)	1.04	4,432
4097	0272M0104097	27.949	87.193	Kosi	I(s)	0.36	3,987	4170	0272M0504170	27.958	87.254	Kosi	E(o)	2.38	4,553
4098	0272M0104098	27.948	87.189	Kosi	I(s)	1.11	4,011	4171	0272M0504171	27.956	87.287	Kosi	E(o)	0.92	4,809
4099	0272M0104099	27.948	87.200	Kosi	I(s)	0.27	3,913	4172	0272M0504172	27.955	87.286	Kosi	E(o)	0.99	4,809
4100	0272M0104100	27.946	87.194	Kosi	I(s)	0.26	3,965	4173	0272M0504173	27.954	87.488	Kosi	E(o)	1.36	4,487
4101	0272M0104101	27.944	87.174	Kosi	I(s)	0.32	4,087	4174	0272M0504174	27.953	87.491	Kosi	E(c)	2.95	4,512
4102	0272M0104102	27.943	87.211	Kosi	I(s)	0.59	3,786	4175	0272M0504175	27.948	87.349	Kosi	E(c)	10.13	3,991
4103	0272M0104103	27.942	87.170	Kosi	I(s)	0.36	4,118	4176	0272M0504176	27.947	87.261	Kosi	E(c)	6.70	4,364
4104	0272M0104104	27.942	87.176	Kosi	I(s)	0.29	4,100	4177	0272M0504177	27.945	87.305	Kosi	E(o)	1.61	4,809
4105	0272M0104105	27.941	87.168	Kosi	I(s)	0.35	4,125	4178	0272M0504178	27.945	87.302	Kosi	E(o)	0.68	4,795
4106	0272M0104106	27.906	87.188	Kosi	E(c)	33.14	4,490	4179	0272M0504179	27.944	87.301	Kosi	E(o)	0.37	4,806
4107	0272M0104107	27.877	87.222	Kosi	E(c)	1.98	4,589	4180	0272M0504180	27.943	87.289	Kosi	E(o)	2.11	4,573
4108	0272M0104108	27.876	87.227	Kosi	E(o)	1.25	4,584	4181	0272M0504181	27.938	87.303	Kosi	E(c)	9.19	4,592
4109	0272M0104109	27.874	87.033	Kosi	I(s)	0.68	5,202	4182	0272M0504182	27.932	87.293	Kosi	E(o)	12.13	4,373
4110	0272M0104110	27.872	87.225	Kosi	E(c)	2.40	4,466	4183	0272M0504183	27.932	87.454	Kosi	E(o)	2.30	4,131
4111	0272M0104111	27.871	87.228	Kosi	E(c)	2.42	4,465	4184	0272M0504184	27.932	87.432	Kosi	E(o)	4.61	4,051
4112	0272M0104112	27.854	87.079	Kosi	M(o)	0.61	5,214	4185	0272M0504185	27.929	87.443	Kosi	E(o)	1.84	4,211
4113	0272M0104113	27.844	87.081	Kosi	M(e)	41.15	4,847	4186	0272M0504186	27.929	87.451	Kosi	E(o)	1.58	3,937
4114	0272M0104114	27.840	87.201	Kosi	M(o)	7.41	3,991	4187	0272M0504187	27.929	87.302	Kosi	E(o)	0.43	4,542
4115	0272M0104115	27.835	87.106	Kosi	M(o)	0.27	5,364	4188	0272M0504188	27.929	87.304	Kosi	E(o)	1.02	4,544

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
4189	0272M0504189	27.925	87.316	Kosi	E(o)	0.88	4,564	4262	0272M0904262	27.888	87.693	Kosi	M(o)	3.37	5,143
4190	0272M0504190	27.924	87.321	Kosi	E(o)	4.27	4,447	4263	0272M0904263	27.888	87.722	Kosi	M(o)	2.34	5,471
4191	0272M0504191	27.922	87.300	Kosi	E(c)	3.25	4,560	4264	0272M0904264	27.886	87.702	Kosi	M(o)	8.37	5,174
4192	0272M0504192	27.918	87.306	Kosi	E(c)	11.15	4,416	4265	0272M0904265	27.879	87.575	Kosi	E(o)	3.35	4,624
4193	0272M0504193	27.913	87.305	Kosi	E(o)	3.68	4,359	4266	0272M0904266	27.876	87.592	Kosi	E(o)	0.32	5,087
4194	0272M0504194	27.912	87.299	Kosi	E(c)	7.13	4,274	4267	0272M0904267	27.864	87.737	Kosi	E(c)	13.98	5,337
4195	0272M0504195	27.899	87.494	Kosi	E(o)	1.74	4,398	4268	0272M0904268	27.863	87.655	Kosi	E(o)	1.40	5,304
4196	0272M0504196	27.854	87.283	Kosi	E(c)	5.79	4,533	4269	0272M0904269	27.860	87.542	Kosi	E(o)	2.18	4,660
4197	0272M0504197	27.848	87.308	Kosi	E(o)	0.71	4,255	4270	0272M0904270	27.853	87.602	Kosi	M(o)	3.92	4,925
4198	0272M0504198	27.846	87.311	Kosi	E(o)	0.85	4,169	4271	0272M0904271	27.850	87.721	Kosi	M(o)	0.26	5,253
4199	0272M0504199	27.842	87.291	Kosi	E(c)	8.36	4,455	4272	0272M0904272	27.850	87.724	Kosi	M(o)	0.82	5,257
4200	0272M0504200	27.838	87.310	Kosi	E(o)	0.28	4,117	4273	0272M0904273	27.850	87.723	Kosi	M(o)	0.75	5,256
4201	0272M0504201	27.838	87.301	Kosi	E(o)	4.37	4,180	4274	0272M0904274	27.850	87.729	Kosi	M(o)	1.36	5,302
4202	0272M0504202	27.837	87.341	Kosi	E(c)	19.17	4,243	4275	0272M0904275	27.850	87.720	Kosi	M(o)	0.49	5,253
4203	0272M0504203	27.836	87.305	Kosi	E(o)	0.82	4,201	4276	0272M0904276	27.849	87.716	Kosi	M(o)	2.31	5,250
4204	0272M0504204	27.824	87.332	Kosi	E(o)	6.06	4,152	4277	0272M0904277	27.844	87.664	Kosi	M(o)	3.36	5,160
4205	0272M0504205	27.824	87.361	Kosi	E(o)	4.84	3,907	4278	0272M0904278	27.842	87.716	Kosi	M(o)	0.41	5,312
4206	0272M0504206	27.822	87.356	Kosi	E(o)	3.91	3,973	4279	0272M0904279	27.842	87.728	Kosi	E(o)	8.98	5,422
4207	0272M0504207	27.822	87.327	Kosi	E(o)	0.69	4,089	4280	0272M0904280	27.841	87.717	Kosi	M(o)	0.85	5,321
4208	0272M0504208	27.821	87.314	Kosi	E(o)	0.59	4,068	4281	0272M0904281	27.838	87.719	Kosi	M(o)	0.84	5,288
4209	0272M0504209	27.820	87.316	Kosi	E(o)	1.63	4,072	4282	0272M0904282	27.836	87.605	Kosi	E(c)	8.76	4,876
4210	0272M0504210	27.820	87.320	Kosi	E(o)	0.75	4,167	4283	0272M0904283	27.836	87.722	Kosi	M(o)	0.39	5,308
4211	0272M0504211	27.817	87.330	Kosi	E(o)	0.64	4,007	4284	0272M0904284	27.833	87.621	Kosi	M(o)	2.01	5,082
4212	0272M0504212	27.814	87.333	Kosi	E(o)	4.54	3,954	4285	0272M0904285	27.832	87.661	Kosi	M(o)	1.26	5,271
4213	0272M0504213	27.812	87.309	Kosi	E(o)	1.85	3,893	4286	0272M0904286	27.831	87.659	Kosi	M(o)	2.37	5,191
4214	0272M0504214	27.806	87.307	Kosi	E(o)	0.33	3,842	4287	0272M0904287	27.831	87.611	Kosi	M(o)	1.96	5,124
4215	0272M0604215	27.587	87.486	Kosi	E(o)	2.07	4,282	4288	0272M0904288	27.828	87.624	Kosi	M(o)	1.85	5,113
4216	0272M0604216	27.563	87.487	Kosi	E(c)	2.53	4,205	4289	0272M0904289	27.826	87.629	Kosi	E(o)	0.62	5,247
4217	0272M0604217	27.529	87.479	Kosi	E(o)	0.76	4,327	4290	0272M0904290	27.822	87.739	Kosi	E(o)	7.05	5,191
4218	0272M0604218	27.529	87.463	Kosi	E(o)	0.91	3,998	4291	0272M0904291	27.820	87.654	Kosi	E(o)	0.29	5,130
4219	0272M0604219	27.527	87.478	Kosi	E(o)	6.69	4,345	4292	0272M0904292	27.820	87.672	Kosi	M(o)	2.41	5,162
4220	0272M0604220	27.526	87.481	Kosi	E(o)	1.19	4,314	4293	0272M0904293	27.818	87.657	Kosi	E(o)	0.26	5,187
4221	0272M0604221	27.526	87.468	Kosi	E(o)	1.28	4,214	4294	0272M0904294	27.817	87.654	Kosi	E(o)	0.37	5,108
4222	0272M0604222	27.523	87.477	Kosi	E(o)	1.23	4,385	4295	0272M0904295	27.817	87.676	Kosi	E(o)	0.54	5,022
4223	0272M0604223	27.522	87.469	Kosi	E(o)	3.76	4,254	4296	0272M0904296	27.816	87.749	Kosi	M(e)	17.17	4,903
4224	0272M0604224	27.520	87.484	Kosi	E(o)	0.43	4,294	4297	0272M0904297	27.814	87.632	Kosi	M(o)	1.37	5,111
4225	0272M0604225	27.520	87.463	Kosi	E(o)	0.86	4,308	4298	0272M0904298	27.813	87.636	Kosi	E(o)	1.41	5,052
4226	0272M0604226	27.519	87.487	Kosi	E(o)	0.58	4,239	4299	0272M0904299	27.811	87.578	Kosi	E(o)	1.00	4,816
4227	0272M0604227	27.518	87.471	Kosi	E(o)	0.77	4,321	4300	0272M0904300	27.809	87.701	Kosi	M(o)	2.91	5,175
4228	0272M0604228	27.517	87.453	Kosi	E(o)	1.62	4,306	4301	0272M0904301	27.808	87.681	Kosi	E(o)	0.39	5,201
4229	0272M0604229	27.517	87.464	Kosi	E(c)	4.31	4,316	4302	0272M0904302	27.808	87.633	Kosi	M(o)	0.68	5,068
4230	0272M0604230	27.515	87.471	Kosi	E(o)	1.20	4,342	4303	0272M0904303	27.808	87.631	Kosi	M(o)	0.67	5,068
4231	0272M0604231	27.504	87.456	Kosi	E(c)	2.55	4,149	4304	0272M0904304	27.806	87.709	Kosi	E(o)	0.46	4,944
4232	0272M0904232	27.999	87.504	Kosi	E(o)	4.02	4,640	4305	0272M0904305	27.805	87.749	Kosi	M(o)	1.16	4,714
4233	0272M0904233	27.997	87.522	Kosi	E(c)	12.38	4,720	4306	0272M0904306	27.803	87.679	Kosi	E(o)	1.71	4,942
4234	0272M0904234	27.996	87.597	Kosi	E(o)	1.60	5,079	4307	0272M0904307	27.802	87.747	Kosi	M(o)	0.26	4,693
4235	0272M0904235	27.992	87.586	Kosi	E(o)	0.89	4,844	4308	0272M0904308	27.799	87.663	Kosi	E(o)	1.06	5,085
4236	0272M0904236	27.991	87.518	Kosi	E(o)	5.40	4,669	4309	0272M0904309	27.799	87.720	Kosi	E(o)	5.07	5,027
4237	0272M0904237	27.990	87.585	Kosi	E(o)	1.99	4,849	4310	0272M0904310	27.797	87.631	Kosi	E(o)	9.59	4,940
4238	0272M0904238	27.990	87.574	Kosi	E(o)	6.88	4,819	4311	0272M0904311	27.794	87.663	Kosi	E(o)	0.39	5,055
4239	0272M0904239	27.987	87.589	Kosi	E(o)	1.19	4,961	4312	0272M0904312	27.794	87.631	Kosi	E(o)	0.30	4,928
4240	0272M0904240	27.986	87.583	Kosi	E(o)	12.33	4,826	4313	0272M0904313	27.792	87.584	Kosi	E(o)	0.67	4,906
4241	0272M0904241	27.986	87.578	Kosi	E(o)	0.41	4,823	4314	0272M0904314	27.791	87.587	Kosi	E(o)	3.30	4,837
4242	0272M0904242	27.986	87.559	Kosi	E(c)	7.07	4,898	4315	0272M0904315	27.789	87.683	Kosi	E(o)	0.42	4,804
4243	0272M0904243	27.984	87.577	Kosi	E(o)	7.61	4,817	4316	0272M0904316	27.785	87.679	Kosi	E(o)	0.77	5,011
4244	0272M0904244	27.980	87.588	Kosi	E(c)	0.35	4,832	4317	0272M0904317	27.785	87.584	Kosi	E(o)	2.84	4,767
4245	0272M0904245	27.979	87.557	Kosi	E(c)	11.03	4,767	4318	0272M0904318	27.783	87.662	Kosi	M(o)	1.24	5,036
4246	0272M0904246	27.969	87.542	Kosi	E(o)	1.05	4,726	4319	0272M0904319	27.781	87.546	Kosi	E(o)	0.39	4,577
4247	0272M0904247	27.959	87.523	Kosi	E(o)	5.21	4,693	4320	0272M0904320	27.781	87.661	Kosi	M(o)	3.97	5,007
4248	0272M0904248	27.958	87.527	Kosi	E(o)	2.09	4,698	4321	0272M0904321	27.779	87.685	Kosi	E(o)	1.21	4,855
4249	0272M0904249	27.957	87.735	Kosi	E(o)	0.68	5,184	4322	0272M0904322	27.777	87.577	Kosi	E(o)	8.23	4,622
4250	0272M0904250	27.956	87.502	Kosi	E(o)	0.90	4,693	4323	0272M0904323	27.770	87.658	Kosi	M(o)	3.03	5,014
4251	0272M0904251	27.933	87.587	Kosi	E(o)	0.34	5,216	4324	0272M0904324	27.770	87.675	Kosi	E(o)	0.37	5,282
4252	0272M0904252	27.931	87.534	Kosi	E(o)	1.19	4,448	4325	0272M0904325	27.767	87.636	Kosi	E(o)	2.52	5,024
4253	0272M0904253	27.925	87.711	Kosi	M(o)	0.51	5,505	4326	0272M0904326	27.765	87.689	Kosi	E(o)	0.44	5,048
4254	0272M0904254	27.918	87.725	Kosi	M(o)	4.39	5,294	4327	0272M0904327	27.759	87.691	Kosi	E(o)	1.11	5,005
4255	0272M0904255	27.916	87.722	Kosi	M(o)	1.90	5,315	4328	0272M0904328	27.758	87.652	Kosi	M(o)	0.61	5,185
4256	0272M0904256	27.916	87.703	Kosi	E(o)	4.19	5,382	4329	0272M0904329	27.758	87.650	Kosi	M(o)	1.39	5,145
4257	0272M0904257	27.915	87.728	Kosi	M(o)	0.82	5,328	4330	0272M0904330	27.755	87.651	Kosi	M(o)	0.71	5,110
4258	0272M0904258	27.915	87.534	Kosi	E(o)	1.09	3,957	4331	0272M0904331	27.754	87.647	Kosi	M(o)	0.51	5,093
4259	0272M0904259	27.900	87.699	Kosi	M(e)	11.27	5,226	4332	0272M0904332	27.754	87.693	Kosi	E(o)	0.75	5,000
4260	0272M0904260	27.898	87.509	Kosi	E(o)	1.12	4,588	4333	0272M0904333	27.753	87.648	Kosi	M(o)	0.70	5,095
4261	0272M0904261	27.897	87.501	Kosi	E(o)	4.63	4,436	4334	0272M1004334	27.747	87.649	Kosi	M(o)	4.72	5,006

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
4335	0272M1004335	27.743	87.605	Kosi	E(o)	0.84	4,814	4408	0272M1004408	27.657	87.709	Kosi	E(o)	1.26	4,611
4336	0272M1004336	27.739	87.673	Kosi	E(o)	1.78	4,842	4409	0272M1004409	27.656	87.711	Kosi	E(o)	0.51	4,622
4337	0272M1004337	27.737	87.713	Kosi	E(o)	5.52	4,764	4410	0272M1004410	27.655	87.622	Kosi	E(o)	1.12	4,689
4338	0272M1004338	27.736	87.667	Kosi	E(o)	0.33	4,930	4411	0272M1004411	27.655	87.553	Kosi	E(o)	5.70	4,429
4339	0272M1004339	27.736	87.703	Kosi	E(o)	0.43	4,804	4412	0272M1004412	27.653	87.610	Kosi	E(o)	1.13	4,631
4340	0272M1004340	27.735	87.662	Kosi	E(o)	0.42	4,988	4413	0272M1004413	27.652	87.698	Kosi	E(o)	0.85	4,456
4341	0272M1004341	27.732	87.624	Kosi	M(o)	1.27	4,980	4414	0272M1004414	27.652	87.723	Kosi	E(o)	0.76	4,760
4342	0272M1004342	27.731	87.623	Kosi	M(o)	1.83	4,983	4415	0272M1004415	27.652	87.709	Kosi	E(o)	5.97	4,478
4343	0272M1004343	27.730	87.654	Kosi	E(o)	0.75	4,929	4416	0272M1004416	27.651	87.703	Kosi	E(o)	14.36	4,460
4344	0272M1004344	27.730	87.726	Kosi	E(o)	0.43	4,642	4417	0272M1004417	27.651	87.518	Kosi	E(o)	3.32	4,473
4345	0272M1004345	27.729	87.718	Kosi	E(o)	0.30	4,687	4418	0272M1004418	27.650	87.612	Kosi	E(o)	0.98	4,599
4346	0272M1004346	27.729	87.674	Kosi	E(o)	1.76	4,877	4419	0272M1004419	27.649	87.731	Kosi	E(o)	0.89	4,712
4347	0272M1004347	27.729	87.677	Kosi	E(o)	3.18	4,829	4420	0272M1004420	27.648	87.737	Kosi	E(o)	0.36	4,583
4348	0272M1004348	27.729	87.632	Kosi	M(o)	3.14	4,943	4421	0272M1004421	27.648	87.560	Kosi	E(o)	1.68	4,223
4349	0272M1004349	27.728	87.670	Kosi	E(o)	0.95	4,934	4422	0272M1004422	27.648	87.612	Kosi	E(o)	0.95	4,592
4350	0272M1004350	27.728	87.596	Kosi	E(o)	2.39	4,855	4423	0272M1004423	27.646	87.623	Kosi	E(o)	9.59	4,439
4351	0272M1004351	27.728	87.719	Kosi	E(o)	0.54	4,713	4424	0272M1004424	27.645	87.620	Kosi	E(o)	2.57	4,441
4352	0272M1004352	27.727	87.717	Kosi	E(o)	0.78	4,753	4425	0272M1004425	27.645	87.573	Kosi	O	11.78	3,860
4353	0272M1004353	27.726	87.720	Kosi	E(o)	0.41	4,719	4426	0272M1004426	27.641	87.615	Kosi	E(o)	1.47	4,595
4354	0272M1004354	27.725	87.619	Kosi	M(o)	7.54	5,048	4427	0272M1004427	27.640	87.553	Kosi	E(o)	1.77	4,609
4355	0272M1004355	27.721	87.555	Kosi	E(o)	0.91	4,583	4428	0272M1004428	27.640	87.618	Kosi	E(o)	5.14	4,566
4356	0272M1004356	27.719	87.563	Kosi	E(o)	3.20	4,805	4429	0272M1004429	27.639	87.633	Kosi	E(c)	16.45	4,289
4357	0272M1004357	27.718	87.648	Kosi	E(o)	0.66	5,088	4430	0272M1004430	27.639	87.732	Kosi	E(o)	3.43	4,578
4358	0272M1004358	27.709	87.693	Kosi	E(o)	2.93	4,753	4431	0272M1004431	27.639	87.615	Kosi	E(o)	1.45	4,573
4359	0272M1004359	27.706	87.691	Kosi	E(c)	2.65	4,749	4432	0272M1004432	27.638	87.716	Kosi	E(o)	2.51	4,537
4360	0272M1004360	27.705	87.596	Kosi	E(o)	2.57	4,773	4433	0272M1004433	27.636	87.624	Kosi	E(o)	5.92	4,425
4361	0272M1004361	27.705	87.599	Kosi	E(o)	2.64	4,813	4434	0272M1004434	27.634	87.715	Kosi	E(o)	1.78	4,496
4362	0272M1004362	27.703	87.652	Kosi	E(o)	1.55	4,824	4435	0272M1004435	27.632	87.540	Kosi	E(c)	1.34	4,778
4363	0272M1004363	27.702	87.656	Kosi	E(o)	4.21	4,740	4436	0272M1004436	27.632	87.614	Kosi	E(o)	6.34	4,435
4364	0272M1004364	27.695	87.695	Kosi	E(o)	0.95	4,768	4437	0272M1004437	27.630	87.543	Kosi	E(o)	3.36	4,713
4365	0272M1004365	27.694	87.681	Kosi	E(o)	0.27	4,720	4438	0272M1004438	27.630	87.696	Kosi	E(c)	14.11	4,179
4366	0272M1004366	27.694	87.693	Kosi	E(o)	1.60	4,760	4439	0272M1004439	27.629	87.615	Kosi	E(o)	2.78	4,422
4367	0272M1004367	27.693	87.624	Kosi	E(o)	0.40	5,129	4440	0272M1004440	27.629	87.706	Kosi	E(o)	13.01	4,319
4368	0272M1004368	27.690	87.692	Kosi	E(o)	5.18	4,651	4441	0272M1004441	27.626	87.740	Kosi	E(o)	3.17	4,345
4369	0272M1004369	27.688	87.541	Kosi	E(o)	2.52	4,620	4442	0272M1004442	27.625	87.548	Kosi	E(o)	1.78	4,462
4370	0272M1004370	27.687	87.690	Kosi	E(o)	1.36	4,608	4443	0272M1004443	27.623	87.697	Kosi	E(o)	0.81	4,311
4371	0272M1004371	27.684	87.688	Kosi	E(o)	1.94	4,584	4444	0272M1004444	27.621	87.720	Kosi	E(o)	0.30	4,641
4372	0272M1004372	27.683	87.722	Kosi	E(o)	0.64	4,713	4445	0272M1004445	27.620	87.712	Kosi	E(o)	12.63	4,454
4373	0272M1004373	27.681	87.583	Kosi	E(c)	7.04	4,766	4446	0272M1004446	27.619	87.736	Kosi	E(o)	4.00	4,457
4374	0272M1004374	27.681	87.694	Kosi	E(c)	13.30	4,633	4447	0272M1004447	27.617	87.543	Kosi	E(c)	10.93	4,471
4375	0272M1004375	27.681	87.517	Kosi	E(c)	10.10	4,472	4448	0272M1004448	27.616	87.561	Kosi	E(c)	1.66	4,385
4376	0272M1004376	27.680	87.603	Kosi	M(o)	2.54	4,862	4449	0272M1004449	27.612	87.550	Kosi	E(c)	4.43	4,547
4377	0272M1004377	27.679	87.712	Kosi	E(o)	3.06	4,912	4450	0272M1004450	27.609	87.708	Kosi	E(o)	4.13	4,268
4378	0272M1004378	27.676	87.734	Kosi	E(o)	2.77	4,447	4451	0272M1004451	27.603	87.535	Kosi	E(o)	1.41	4,367
4379	0272M1004379	27.675	87.633	Kosi	E(o)	4.66	4,923	4452	0272M1004452	27.602	87.522	Kosi	E(c)	4.53	4,250
4380	0272M1004380	27.675	87.516	Kosi	E(c)	5.83	4,642	4453	0272M1004453	27.601	87.699	Kosi	E(o)	0.60	3,993
4381	0272M1004381	27.674	87.625	Kosi	M(o)	4.20	4,910	4454	0272M1004454	27.600	87.550	Kosi	E(c)	3.26	4,322
4382	0272M1004382	27.674	87.621	Kosi	M(o)	2.04	4,939	4455	0272M1004455	27.596	87.536	Kosi	E(o)	0.91	4,406
4383	0272M1004383	27.674	87.555	Kosi	E(o)	5.09	4,664	4456	0272M1004456	27.594	87.516	Kosi	E(o)	1.55	4,314
4384	0272M1004384	27.673	87.694	Kosi	E(o)	1.60	4,521	4457	0272M1004457	27.594	87.561	Kosi	E(c)	3.68	4,244
4385	0272M1004385	27.673	87.728	Kosi	E(o)	4.35	4,693	4458	0272M1004458	27.592	87.555	Kosi	E(o)	0.54	4,439
4386	0272M1004386	27.672	87.637	Kosi	E(o)	0.78	4,923	4459	0272M1004459	27.590	87.531	Kosi	E(o)	1.69	4,381
4387	0272M1004387	27.672	87.629	Kosi	M(o)	0.81	4,862	4460	0272M1004460	27.590	87.564	Kosi	E(o)	1.15	4,153
4388	0272M1004388	27.672	87.620	Kosi	M(o)	1.45	5,017	4461	0272M1004461	27.588	87.513	Kosi	E(o)	0.98	4,148
4389	0272M1004389	27.671	87.519	Kosi	E(o)	1.29	4,734	4462	0272M1004462	27.588	87.523	Kosi	E(o)	0.86	4,480
4390	0272M1004390	27.671	87.660	Kosi	E(o)	0.75	4,666	4463	0272M1004463	27.587	87.534	Kosi	E(o)	0.37	4,324
4391	0272M1004391	27.670	87.518	Kosi	E(o)	0.32	4,746	4464	0272M1004464	27.586	87.507	Kosi	E(o)	3.90	4,296
4392	0272M1004392	27.669	87.662	Kosi	E(o)	0.30	4,663	4465	0272M1004465	27.582	87.502	Kosi	E(o)	0.36	4,438
4393	0272M1004393	27.667	87.702	Kosi	E(o)	7.45	4,589	4466	0272M1004466	27.581	87.532	Kosi	E(c)	3.74	4,272
4394	0272M1004394	27.667	87.707	Kosi	E(o)	3.71	4,590	4467	0272M1004467	27.576	87.534	Kosi	E(o)	1.09	4,260
4395	0272M1004395	27.666	87.519	Kosi	E(c)	6.72	4,815	4468	0272M1004468	27.573	87.536	Kosi	E(o)	0.34	4,122
4396	0272M1004396	27.666	87.586	Kosi	E(o)	2.33	4,560	4469	0272M1304469	27.989	87.837	Kosi	E(o)	1.65	5,799
4397	0272M1004397	27.664	87.665	Kosi	E(o)	3.70	4,563	4470	0272M1304470	27.988	87.869	Kosi	M(e)	7.00	5,656
4398	0272M1004398	27.662	87.733	Kosi	E(o)	0.89	4,669	4471	0272M1304471	27.980	87.833	Kosi	M(o)	2.19	5,654
4399	0272M1004399	27.662	87.629	Kosi	E(c)	3.61	4,902	4472	0272M1304472	27.977	87.845	Kosi	I(s)	0.80	5,823
4400	0272M1004400	27.662	87.711	Kosi	E(o)	0.88	4,656	4473	0272M1304473	27.976	87.832	Kosi	M(o)	1.36	5,619
4401	0272M1004401	27.662	87.701	Kosi	E(o)	1.48	4,436	4474	0272M1304474	27.975	87.851	Kosi	M(o)	2.62	5,837
4402	0272M1004402	27.661	87.723	Kosi	E(o)	2.46	4,826	4475	0272M1304475	27.972	87.861	Kosi	E(o)	0.36	5,803
4403	0272M1004403	27.661	87.730	Kosi	E_Type	2.47	4,688	4476	0272M1304476	27.972	87.845	Kosi	M(o)	6.26	5,776
4404	0272M1004404	27.660	87.727	Kosi	E(o)	0.26	4,705	4477	0272M1304477	27.969	87.868	Kosi	M(o)	4.00	5,646
4405	0272M1004405	27.660	87.657	Kosi	E(o)	0.49	4,492	4478	0272M1304478	27.969	87.884	Kosi	M(l)	17.90	5,597
4406	0272M1004406	27.659	87.614	Kosi	E(o)	2.75	4,727	4479	0272M1304479	27.968	87.891	Kosi	M(l)	1.18	5,582
4407	0272M1004407	27.657	87.726	Kosi	E(o)	2.29	4,727	4480	0272M1304480	27.966	87.760	Kosi	E(o)	1.11	5,445

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
4481	0272M1304481	27.965	87.871	Kosi	M(o)	2.67	5,707	4554	0272M1404554	27.738	87.943	Kosi	E(o)	0.35	5,126
4482	0272M1304482	27.964	87.814	Kosi	M(e)	40.61	5,249	4555	0272M1404555	27.737	87.941	Kosi	E(o)	5.41	5,055
4483	0272M1304483	27.956	87.765	Kosi	E(o)	0.61	5,168	4556	0272M1404556	27.735	87.773	Kosi	E(o)	3.09	4,672
4484	0272M1304484	27.952	87.908	Kosi	M(e)	64.79	5,165	4557	0272M1404557	27.735	87.811	Kosi	E(o)	3.11	4,802
4485	0272M1304485	27.951	87.985	Kosi	M(o)	4.31	5,484	4558	0272M1404558	27.722	87.928	Kosi	M(o)	3.83	5,040
4486	0272M1304486	27.950	87.930	Kosi	M(e)	83.66	5,106	4559	0272M1404559	27.717	87.790	Kosi	E(o)	4.54	4,481
4487	0272M1304487	27.948	87.806	Kosi	M(o)	0.50	5,553	4560	0272M1404560	27.714	87.755	Kosi	E(o)	2.01	4,401
4488	0272M1304488	27.946	87.981	Kosi	M(o)	5.96	5,556	4561	0272M1404561	27.705	87.895	Kosi	E(o)	0.45	4,635
4489	0272M1304489	27.945	87.789	Kosi	M(o)	2.07	5,384	4562	0272M1404562	27.695	87.893	Kosi	E(o)	2.72	4,563
4490	0272M1304490	27.944	87.894	Kosi	M(o)	0.55	5,493	4563	0272M1404563	27.681	87.881	Kosi	E(o)	1.52	4,715
4491	0272M1304491	27.943	87.897	Kosi	M(o)	2.66	5,493	4564	0272M1404564	27.680	87.879	Kosi	E(o)	0.91	4,716
4492	0272M1304492	27.937	87.836	Kosi	E(o)	2.29	5,370	4565	0272M1404565	27.679	87.908	Kosi	E(o)	0.43	4,980
4493	0272M1304493	27.937	87.832	Kosi	E(o)	0.93	5,448	4566	0272M1404566	27.674	87.883	Kosi	E(o)	1.03	4,813
4494	0272M1304494	27.931	87.806	Kosi	M(o)	0.72	5,430	4567	0272M1404567	27.672	87.886	Kosi	E(o)	0.45	4,660
4495	0272M1304495	27.928	88.002	Kosi	M(e)	113.22	5,348	4568	0272M1404568	27.672	87.883	Kosi	E(o)	0.78	4,666
4496	0272M1304496	27.926	87.771	Kosi	M(e)	97.66	4,913	4569	0272M1404569	27.657	87.865	Kosi	E(o)	2.39	4,300
4497	0272M1304497	27.926	87.991	Kosi	E(c)	5.60	5,602	4570	0272M1404570	27.653	87.890	Kosi	E(o)	1.59	4,695
4498	0272M1304498	27.923	87.751	Kosi	I(s)	1.08	5,083	4571	0272M1404571	27.647	87.981	Kosi	M(o)	2.22	4,903
4499	0272M1304499	27.916	87.811	Kosi	E(o)	1.01	5,400	4572	0272M1404572	27.641	87.836	Kosi	E(o)	0.81	4,196
4500	0272M1304500	27.913	87.849	Kosi	E(o)	0.44	5,455	4573	0272M1404573	27.638	87.986	Kosi	M(l)	1.36	4,533
4501	0272M1304501	27.912	87.849	Kosi	E(o)	1.76	5,458	4574	0272M1404574	27.596	87.967	Kosi	E(o)	0.45	5,018
4502	0272M1304502	27.911	87.816	Kosi	M(e)	2.44	5,174	4575	0272M1404575	27.595	87.972	Kosi	E(o)	2.51	4,936
4503	0272M1304503	27.906	87.919	Kosi	E(o)	2.97	5,458	4576	0272M1404576	27.592	87.972	Kosi	E(o)	0.64	4,929
4504	0272M1304504	27.904	87.916	Kosi	E(o)	2.91	5,463	4577	0272M1404577	27.591	87.977	Kosi	E(c)	2.76	4,977
4505	0272M1304505	27.903	87.850	Kosi	E(o)	1.16	5,251	4578	0272M1404578	27.570	87.952	Kosi	E(o)	1.09	4,319
4506	0272M1304506	27.886	87.860	Kosi	E(o)	0.29	5,405	4579	0272M1404579	27.537	87.971	Kosi	E(o)	0.69	4,387
4507	0272M1304507	27.881	87.805	Kosi	M(e)	34.32	4,690	4580	0272M1404580	27.523	87.993	Kosi	E(o)	1.29	4,389
4508	0272M1304508	27.878	87.806	Kosi	E(o)	0.69	4,728	4581	0272M1404581	27.514	87.959	Kosi	E(o)	0.36	4,272
4509	0272M1304509	27.878	87.854	Kosi	E(o)	1.19	5,212	4582	0272M1404582	27.514	87.990	Kosi	E(o)	0.25	4,136
4510	0272M1304510	27.876	87.856	Kosi	E(o)	1.86	5,214	4583	0272M1404583	27.511	87.989	Kosi	E(o)	0.41	4,001
4511	0272M1304511	27.873	87.803	Kosi	E(o)	0.73	4,944	4584	0272M1404584	27.510	87.958	Kosi	E(o)	1.15	4,193
4512	0272M1304512	27.873	87.801	Kosi	E(o)	0.57	4,969	4585	0277D0204585	28.746	88.132	Kosi	E(o)	6.28	5,583
4513	0272M1304513	27.872	87.889	Kosi	E(o)	0.41	5,292	4586	0277D0204586	28.739	88.137	Kosi	E(o)	1.14	5,494
4514	0272M1304514	27.871	87.892	Kosi	E(o)	0.38	5,144	4587	0277D0204587	28.736	88.107	Kosi	E(o)	0.26	5,629
4515	0272M1304515	27.869	87.866	Kosi	M(e)	68.12	4,910	4588	0277D0204588	28.734	88.123	Kosi	E(o)	0.49	5,582
4516	0272M1304516	27.868	87.930	Kosi	E(o)	0.57	5,444	4589	0277D0204589	28.731	88.123	Kosi	E(o)	0.56	5,571
4517	0272M1304517	27.865	87.933	Kosi	E(o)	0.90	5,306	4590	0277D0204590	28.730	88.140	Kosi	E(o)	0.58	5,431
4518	0272M1304518	27.863	87.807	Kosi	E(o)	0.62	5,066	4591	0277D0204591	28.729	88.135	Kosi	E(o)	2.85	5,520
4519	0272M1304519	27.858	87.929	Kosi	E(o)	0.49	5,309	4592	0277D0204592	28.724	88.129	Kosi	E(o)	1.84	5,472
4520	0272M1304520	27.855	87.753	Kosi	M(o)	4.86	5,358	4593	0277D0204593	28.723	88.135	Kosi	E(o)	2.23	5,385
4521	0272M1304521	27.853	87.790	Kosi	M(o)	6.12	5,274	4594	0277D0204594	28.717	88.125	Kosi	E(o)	2.83	5,490
4522	0272M1304522	27.851	87.807	Kosi	E(o)	0.27	5,117	4595	0277D0204595	28.715	88.149	Kosi	E(c)	1.47	5,445
4523	0272M1304523	27.849	87.831	Kosi	O	33.50	4,437	4596	0277D0204596	28.707	88.242	Kosi	E(o)	0.75	5,419
4524	0272M1304524	27.847	87.970	Kosi	M(o)	2.39	5,304	4597	0277D0204597	28.687	88.231	Kosi	E(o)	1.35	5,485
4525	0272M1304525	27.846	87.962	Kosi	M(e)	8.19	5,205	4598	0277D0204598	28.685	88.239	Kosi	E(o)	1.23	5,381
4526	0272M1304526	27.844	87.875	Kosi	E(c)	4.82	5,281	4599	0277D0404599	28.038	88.023	Kosi	I(s)	1.02	5,485
4527	0272M1304527	27.841	87.795	Kosi	M(o)	0.74	4,854	4600	0277D0404600	28.036	88.023	Kosi	I(s)	0.35	5,498
4528	0272M1304528	27.838	87.936	Kosi	M(o)	1.19	4,712	4601	0277D0404601	28.011	88.240	Kosi	M(o)	0.29	5,271
4529	0272M1304529	27.838	87.929	Kosi	M(o)	1.48	4,708	4602	0277D0404602	28.004	88.241	Kosi	M(e)	41.80	5,269
4530	0272M1304530	27.833	87.923	Kosi	M(o)	0.64	4,767	4603	0277D0604603	28.660	88.280	Kosi	E(o)	1.44	5,533
4531	0272M1304531	27.826	87.799	Kosi	E(o)	2.76	5,122	4604	0277D0604604	28.653	88.314	Kosi	E(o)	1.94	5,517
4532	0272M1304532	27.809	87.891	Kosi	M(o)	0.70	4,905	4605	0277D0604605	28.650	88.393	Kosi	E(o)	0.75	5,639
4533	0272M1304533	27.806	87.819	Kosi	M(o)	1.12	5,163	4606	0277D0604606	28.649	88.333	Kosi	E(o)	2.90	5,434
4534	0272M1304534	27.796	87.947	Kosi	M(o)	0.28	5,397	4607	0277D0604607	28.639	88.407	Kosi	E(o)	1.44	5,577
4535	0272M1304535	27.793	87.974	Kosi	M(e)	22.32	5,183	4608	0277D0604608	28.633	88.283	Kosi	E(o)	1.44	5,406
4536	0272M1304536	27.791	87.929	Kosi	M(o)	0.59	5,082	4609	0277D0704609	28.726	88.124	Kosi	E(o)	0.48	5,530
4537	0272M1304537	27.790	87.934	Kosi	M(o)	14.10	4,938	4610	0277D0804610	28.118	88.378	Kosi	O	0.81	4,777
4538	0272M1304538	27.784	87.775	Kosi	M(l)	1.11	4,936	4611	0277D0804611	28.118	88.381	Kosi	O	0.48	4,776
4539	0272M1304539	27.781	87.945	Kosi	M(e)	3.82	4,862	4612	0277D0804612	28.109	88.393	Kosi	O	0.81	4,782
4540	0272M1304540	27.777	87.800	Kosi	M(o)	0.44	4,996	4613	0277D0804613	28.109	88.396	Kosi	O	0.50	4,778
4541	0272M1304541	27.769	87.968	Kosi	M(o)	1.59	5,221	4614	0277D0804614	28.054	88.427	Kosi	O	101.66	4,888
4542	0272M1304542	27.765	87.791	Kosi	E(o)	0.59	4,831	4615	0277D0804615	28.036	88.381	Kosi	M(o)	1.01	5,515
4543	0272M1304543	27.762	87.794	Kosi	E(o)	1.28	4,906	4616	0277D0804616	28.034	88.382	Kosi	M(o)	0.77	5,515
4544	0272M1304544	27.757	87.777	Kosi	E(c)	25.46	4,708	4617	0277D0804617	28.033	88.461	Kosi	E(o)	13.87	5,156
4545	0272M1304545	27.755	87.812	Kosi	E(o)	0.50	4,842	4618	0277D0804618	28.032	88.377	Kosi	M(o)	0.53	5,561
4546	0272M1304546	27.754	87.766	Kosi	E(o)	1.03	4,809	4619	0277D0804619	28.032	88.378	Kosi	M(o)	0.46	5,553
4547	0272M1404547	27.749	87.784	Kosi	E(o)	0.60	4,936	4620	0277D0804620	28.030	88.440	Kosi	E(o)	1.78	5,017
4548	0272M1404548	27.749	87.787	Kosi	E(o)	0.72	4,964	4621	0277D0804621	28.026	88.377	Kosi	M(o)	2.38	5,617
4549	0272M1404549	27.747	87.754	Kosi	E(op)	0.38	4,699	4622	0277D0804622	28.022	88.355	Kosi	M(e)	56.29	5,195
4550	0272M1404550	27.747	87.799	Kosi	E(o)	0.44	4,650	4623	0277D0804623	28.018	88.255	Kosi	M(o)	0.55	5,256
4551	0272M1404551	27.745	87.782	Kosi	E(c)	19.69	4,775	4624	0277D0804624	28.017	88.288	Kosi	M(e)	50.43	5,268
4552	0272M1404552	27.743	87.784	Kosi	E(o)	1.40	4,788	4625	0277D0804625	28.014	88.436	Kosi	M(o)	0.42	5,361
4553	0272M1404553	27.738	87.778	Kosi	E(o)	22.06	4,705	4626	0277D0804626	28.010	88.373	Kosi	M(o)	3.13	5,509

S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)	S.No.	Glacial Lake ID No	Lat	Long	Subbasin	GL Type	Area (ha)	Elev (m)
4627	0277D0804627	28.009	88.259	Kosi	M(e)	59.70	5,256	4668	0278A0104668	27.785	88.141	Kosi	I(s)	0.48	5,179
4628	0277D0804628	28.005	88.320	Kosi	M(e)	38.58	5,104	4669	0278A0104669	27.774	88.018	Kosi	M(o)	0.90	4,596
4629	0277D0804629	28.001	88.327	Kosi	M(e)	6.51	5,299	4670	0278A0104670	27.771	88.019	Kosi	M(o)	1.04	4,596
4630	0277D0804630	28.000	88.388	Kosi	E(o)	1.28	5,507	4671	0278A0104671	27.770	88.016	Kosi	M(o)	0.26	4,592
4631	0277D1004631	28.554	88.718	Kosi	E(o)	2.39	5,502	4672	0278A0204672	27.640	88.070	Kosi	I(s)	1.24	4,865
4632	0277D1204632	28.065	88.543	Kosi	M(e)	7.31	5,712	4673	0278A0204673	27.633	88.069	Kosi	I(s)	0.36	4,813
4633	0277D1204633	28.057	88.517	Kosi	M(e)	7.03	5,561	4674	0278A0204674	27.630	88.072	Kosi	I(s)	0.78	4,810
4634	0277D1204634	28.056	88.520	Kosi	M(e)	0.94	5,571	4675	0278A0204675	27.614	88.068	Kosi	I(s)	1.11	4,702
4635	0278A0104635	27.994	88.211	Kosi	M(o)	5.08	5,233	4676	0278A0204676	27.612	88.062	Kosi	I(s)	0.56	4,661
4636	0278A0104636	27.988	88.221	Kosi	M(e)	11.94	5,372	4677	0278A0204677	27.605	88.044	Kosi	E(o)	0.74	4,922
4637	0278A0104637	27.946	88.075	Kosi	M(e)	148.59	5,488	4678	0278A0204678	27.593	88.026	Kosi	M(l)	0.52	4,476
4638	0278A0104638	27.943	88.041	Kosi	M(o)	10.32	5,821	4679	0278A0204679	27.593	88.029	Kosi	M(l)	0.57	4,475
4639	0278A0104639	27.933	88.066	Kosi	M(e)	83.35	5,563	4680	0278A0204680	27.592	88.012	Kosi	M(l)	0.42	4,433
4640	0278A0104640	27.928	88.019	Kosi	M(e)	13.25	5,692	4681	0278A0204681	27.586	88.041	Kosi	I(s)	1.15	4,483
4641	0278A0104641	27.879	88.019	Kosi	M(o)	0.75	5,645	4682	0278A0204682	27.582	88.056	Kosi	M(o)	0.34	4,661
4642	0278A0104642	27.873	88.054	Kosi	M(o)	0.67	5,658	4683	0278A0204683	27.563	88.043	Kosi	E(o)	0.63	5,110
4643	0278A0104643	27.861	88.051	Kosi	M(o)	0.93	5,521	4684	0278A0204684	27.560	88.034	Kosi	E(o)	3.07	5,058
4644	0278A0104644	27.860	88.054	Kosi	M(o)	5.79	5,491	4685	0278A0204685	27.559	88.038	Kosi	E(o)	1.19	5,131
4645	0278A0104645	27.851	88.029	Kosi	I(s)	0.81	5,168	4686	0278A0204686	27.558	88.035	Kosi	E(o)	0.35	5,117
4646	0278A0104646	27.847	88.031	Kosi	I(s)	2.14	5,139	4687	0278A0204687	27.549	88.037	Kosi	E(o)	1.07	5,096
4647	0278A0104647	27.845	88.102	Kosi	M(o)	0.32	5,751	4688	0278A0204688	27.549	88.057	Kosi	M(o)	0.35	5,238
4648	0278A0104648	27.839	88.026	Kosi	E(o)	1.37	5,395	4689	0278A0204689	27.548	88.027	Kosi	E(o)	1.08	4,964
4649	0278A0104649	27.839	88.037	Kosi	I(s)	1.07	5,102	4690	0278A0204690	27.547	88.003	Kosi	E(o)	3.31	4,614
4650	0278A0104650	27.838	88.040	Kosi	I(s)	1.53	5,101	4691	0278A0204691	27.545	88.050	Kosi	M(o)	25.72	5,020
4651	0278A0104651	27.835	88.038	Kosi	I(s)	0.43	5,110	4692	0278A0204692	27.541	88.053	Kosi	M(o)	0.49	5,099
4652	0278A0104652	27.835	88.037	Kosi	I(s)	0.52	5,104	4693	0278A0204693	27.541	88.045	Kosi	E(o)	1.56	4,934
4653	0278A0104653	27.835	88.078	Kosi	M(e)	16.48	5,604	4694	0278A0204694	27.530	88.054	Kosi	E(o)	1.02	5,104
4654	0278A0104654	27.835	88.014	Kosi	E(o)	0.71	5,457	4695	0278A0304695	27.490	88.038	Kosi	E(o)	2.80	4,444
4655	0278A0104655	27.834	88.067	Kosi	M(e)	2.94	5,601	4696	0278A0304696	27.475	88.035	Kosi	E(o)	2.68	4,369
4656	0278A0104656	27.834	88.040	Kosi	I(s)	0.46	5,094	4697	0278A0304697	27.474	88.040	Kosi	E(o)	0.65	4,452
4657	0278A0104657	27.832	88.068	Kosi	M(o)	0.81	5,590	4698	0278A0304698	27.438	88.058	Kosi	E(c)	8.13	4,323
4658	0278A0104658	27.830	88.070	Kosi	M(o)	0.52	5,580	4699	0278A0304699	27.437	88.049	Kosi	E(o)	0.65	4,221
4659	0278A0104659	27.830	88.069	Kosi	M(o)	0.43	5,583	4700	0278A0504700	27.997	88.382	Kosi	M(o)	1.84	5,516
4660	0278A0104660	27.829	88.040	Kosi	I(s)	0.47	5,084	4701	0278A0504701	27.996	88.316	Kosi	M(o)	2.44	5,204
4661	0278A0104661	27.817	88.131	Kosi	E(o)	0.40	5,589	4702	0278A0504702	27.994	88.402	Kosi	M(e)	18.97	5,171
4662	0278A0104662	27.804	88.138	Kosi	I(s)	2.33	5,300	4703	0278A0504703	27.994	88.321	Kosi	M(o)	0.47	5,241
4663	0278A0104663	27.801	88.107	Kosi	M(o)	6.38	5,495	4704	0278A0504704	27.994	88.322	Kosi	M(o)	0.46	5,245
4664	0278A0104664	27.797	88.007	Kosi	M(o)	1.17	5,106	4705	0278A0504705	27.992	88.317	Kosi	M(o)	1.61	5,277
4665	0278A0104665	27.796	88.105	Kosi	M(o)	2.46	5,373	4706	0278A0504706	27.988	88.306	Kosi	I(s)	0.53	5,529
4666	0278A0104666	27.793	88.000	Kosi	E(o)	2.04	5,114	4707	0278A0504707	27.986	88.317	Kosi	I(s)	0.31	5,389
4667	0278A0104667	27.786	88.142	Kosi	I(s)	1.30	5,180								

Annexure - III: Glacial Lakes of Ganga River basin with area ≥ 50 ha

There are 58 lakes having an area ≥ 50 ha, which is just 1.23% of the total glacial lake count, but covers total of 37.59% of the total glacial lakes area. Spatial distribution of these very large sized lakes i.e. ≥ 50 ha in area has been represented below in Figure 93 and details of these are given in Table 75, along with its area, type, geographic as well as hydrological location, and elevation at which they are situated. Among these 58 lakes, 33, 18 and 7 lakes are in the lake area range of < 100 ha, 100 - 250 ha and ≥ 250 ha respectively. Out of these 58 large lakes, majority (49) are moraine-dammed glacial lakes and few are glacier erosion lakes (5) and other glacial lakes (4). These very large sized lakes are situated within the elevation range of 4,038 to 5,589 m amsl, the largest one being in Kosi subbasin at 5,352 m, followed by second largest also in Kosi subbasin at 5,067 m.
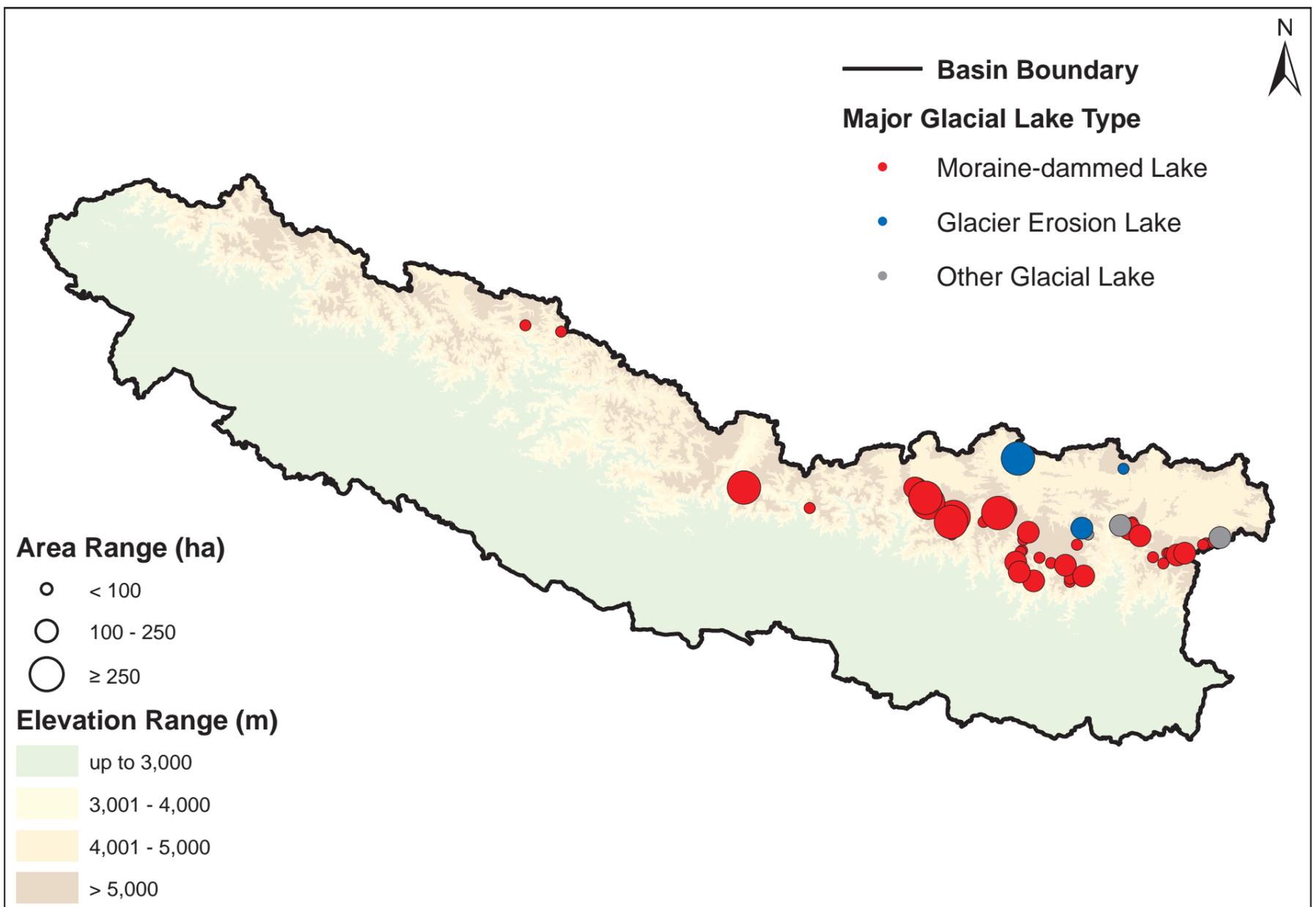
Figure 93: Spatial distribution of glacial lakes with area ≥ 50 ha

Table 75: List of glacial lakes with area ≥ 50 ha

S.No.	Glacial Lake ID No	Latitude	Longitude	Subbasin	GL Type	Area (ha)	Elevation (m)
1	0277D0804624	28.017	88.288	Kosi	M(e)	50.43	5,268
2	0271H0602059	28.644	85.491	Kosi	M(e)	50.98	4,985
3	0271H1102183	28.485	85.736	Kosi	M(e)	51.99	5,335
4	0272I1303932	27.924	86.786	Kosi	M(l)	54.85	4,512
5	0271L0302555	28.335	86.192	Kosi	M(e)	55.00	5,422
6	0271L0302551	28.347	86.225	Kosi	M(e)	55.90	5,348
7	0277D0804622	28.022	88.355	Kosi	M(e)	56.29	5,195
8	0272I0903725	27.975	86.681	Kosi	M(l)	57.83	4,834
9	0271L1203072	28.044	86.514	Kosi	M(l)	57.94	5,241
10	0271L0302557	28.303	86.157	Kosi	M(e)	59.05	5,307
11	0277D0804627	28.009	88.259	Kosi	M(e)	59.70	5,256
12	0271P1003475	28.694	87.534	Kosi	E(o)	60.74	5,158
13	0271L0802932	28.033	86.500	Kosi	M(e)	60.86	5,057
14	0271H1602493	28.211	85.847	Kosi	M(e)	61.34	4,374
15	0262J0400880	30.067	82.127	Ghaghara	M(l)	62.33	4,829
16	0272M1304484	27.952	87.908	Kosi	M(e)	64.79	5,165
17	0271P0403183	28.205	87.052	Kosi	O	65.11	4,980
18	0271L1203013	28.185	86.532	Kosi	M(e)	67.68	5,025
19	0272M1304515	27.869	87.866	Kosi	M(e)	68.12	4,910
20	0271P1203566	28.093	87.637	Kosi	M(e)	72.47	5,178
21	0262F1600708	30.129	81.781	Ghaghara	M(e)	75.65	5,015
22	0271P1203514	28.230	87.591	Kosi	M(e)	78.90	5,410
23	0271P0403232	28.068	87.047	Kosi	M(e)	78.93	5,589
24	0271P0903420	28.858	86.519	Kosi	E(o)	81.24	5,254
25	0278A0104639	27.933	88.066	Kosi	M(e)	83.35	5,563
26	0272M1304486	27.950	87.930	Kosi	M(e)	83.66	5,106
27	0272I1304032	27.755	86.958	Kosi	M(o)	86.50	4,927
28	0272I1304014	27.783	86.957	Kosi	M(e)	87.28	5,198
29	0271D0701882	28.488	84.486	Gandak	M(e)	89.44	4,038
30	0271P0403201	28.152	87.158	Kosi	O	94.74	5,141
31	0272M1304496	27.926	87.771	Kosi	M(e)	97.66	4,913
32	0271L1203032	28.135	86.531	Kosi	M(e)	97.85	4,984
33	0271L0902947	28.887	86.514	Kosi	E(o)	98.23	5,098
34	0271P0703342	28.393	86.379	Kosi	M(e)	100.11	5,482
35	0277D0804614	28.054	88.427	Kosi	O	101.66	4,888
36	0271P0403182	28.208	87.101	Kosi	E(o)	101.93	4,852
37	0271H1002154	28.616	85.527	Kosi	M(e)	103.58	5,113
38	0271P1203527	28.178	87.563	Kosi	M(e)	104.19	5,011
39	0272M1304495	27.928	88.002	Kosi	M(e)	113.22	5,348
40	0272I0903801	27.779	86.612	Kosi	M(e)	117.31	4,831

S.No.	Glacial Lake ID No	Latitude	Longitude	Subbasin	GL Type	Area (ha)	Elevation (m)
41	0271H1002153	28.623	85.510	Kosi	M(e)	118.78	5,127
42	0271H1002162	28.562	85.602	Kosi	M(e)	129.19	5,361
43	0271P0803345	28.213	87.470	Kosi	O	131.39	4,781
44	0271L0702788	28.199	86.582	Kosi	M(e)	134.64	5,094
45	0272I1303950	27.898	86.925	Kosi	M(e)	139.77	5,003
46	0271P1203561	28.114	87.655	Kosi	M(e)	146.34	4,954
47	0278A0104637	27.946	88.075	Kosi	M(e)	148.59	5,488
48	0272I0503634	27.947	86.446	Kosi	M(e)	156.76	5,046
49	0272I0503648	27.861	86.476	Kosi	M(e)	158.40	4,550
50	0272M0104125	27.798	87.092	Kosi	M(e)	182.16	4,543
51	0271H1502402	28.329	85.869	Kosi	M(o)	213.52	5,167
52	0271P0903422	28.832	86.522	Kosi	E(o)	281.32	5,319
53	0262P1401803	28.691	83.852	Gandak	M(o)	340.21	4,910
54	0271L0702736	28.374	86.305	Kosi	M(e)	391.50	5,346
55	0271H1502391	28.360	85.871	Kosi	M(e)	463.78	5,212
56	0271H1002177	28.494	85.636	Kosi	M(e)	490.68	5,278
57	0271H1502405	28.322	85.838	Kosi	M(e)	540.35	5,067
58	0271H1002165	28.532	85.609	Kosi	M(e)	540.55	5,352

Annexure - IV: Glossary

Ablation: The process that reduce the mass of the glacier (Cogley et al., 2011).

Ablation area/zone: The part of the glacier where ablation exceeds accumulation in magnitude, that is, where the cumulative mass balance relative to the start of the mass-balance year is negative. The extent of the ablation zone can vary strongly from year to year (Cogley et al., 2011).

Accumulation: The process that add to the mass of the glacier (Cogley et al., 2011).

Accumulation area/zone: The part of the glacier where accumulation exceeds ablation in magnitude, that is, where the cumulative mass balance relative to the start of the mass-balance year is positive. The extent of the accumulation zone can vary strongly from year to year. The accumulation zone is not the same as the firn area (Cogley et al., 2011).

Altitude: The vertical distance of a point above a datum, which is usually an estimate of mean sea level. Altitude and elevation are synonyms in common usage (Cogley et al., 2011).

Aspect: The compass direction towards which a slope faces; measured clockwise in degrees from the North. Attribute: Non-spatial descriptive characteristics of a real-world phenomenon, often a measurement or value associated with spatial locations.

Attribute: Non-spatial descriptive characteristics of a real-world phenomenon, often a measurement or value associated with spatial locations.

Avalanche: A slide or flow of a mass of snow, firn or ice that becomes detached abruptly, often entraining additional material such as snow, debris and vegetation as it descends. The duration of an avalanche is typically seconds to minutes (Cogley et al., 2011).

Band: One layer of multispectral image representing data values for a specific range of the electromagnetic spectrum of reflected light or heat.

Climate: Climate is usually defined as the average weather or as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. The classical period for averaging these variables is 30 years. The relevant quantities are most often surface variables such as temperature, precipitation and wind (Pandey, 2019).

Climate change: Climate change refers to a change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. UNFCCC defines climate change as: 'a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods'. (Pandey, 2019).

Climate variability: Climate variability refers to variations in the mean state and other statistics (such as standard deviations, the occurrence of extremes, etc.) of the climate on all spatial and temporal scales beyond that of individual weather events. Variability may be due to natural internal processes within the climate system (internal variability), or to variations in natural or anthropogenic external forcing (external variability) (Pandey, 2019).

Cryosphere: The cryosphere is the part of the Earth system that contains ice, for example snow on the ground, glaciers, ice sheets, lake ice, river ice, sea ice, seasonally and perennially frozen ground (GCW 2016).

Database: An organized, integrated collection of data related by a common fact or purpose.

Debris-covered glacier: A glacier that is covered at its tongue with supra-glacial debris across its full width (Kirkbride, 2011). In the accumulation zone any deposited debris is buried by later snowfalls, but in the ablation zone debris remains at the surface and englacial debris is added to the surface layer from beneath as ice ablates away. The debris cover affects the rate of ablation, with very thin debris resulting in accelerated melt and debris thicker than a few tens of millimetres reducing the melting rate (Cogley et al., 2011).

Digital Elevation Model (DEM): An array of numbers representing the elevation of part or all of the Earth's surface as samples or averages at fixed spacing in two horizontal coordinate directions (Cogley et al., 2011).

Disaster: A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts (UNISDR 2017).

Disaster risk: The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity (UNISDR 2017).

Early warning system: The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare to act promptly and appropriately to reduce the possibility of harm or loss (Pandey, 2019).

Electromagnetic spectrum: The spectrum of wavelengths of electromagnetic radiation.

Englacial: Pertaining to the interior of the glacier, between the summer surface and the bed (Cogley et al., 2011).

Exposure: The presence or situation of people, livelihoods, species, ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings, and other tangible human assets located in hazard-prone areas that could be adversely affected (UNISDR, 2017; Pandey, 2019).

Feature: A real-world phenomenon, often used in cartography to name classes of elements shown on a map.

Firn: Snow (in which the pore space is at least partially interconnected, allowing air and water to circulate) that has survived at least one ablation season but has not been transformed to glacier ice (Cogley et al., 2011).

Flood: The overflowing of the normal confines of a stream or other body of water, or the accumulation of water over areas not normally submerged. Floods include river (fluvial) floods, flash floods, urban floods, pluvial floods, sewer floods, coastal floods and glacial lake outburst floods (Pandey, 2019).

Format: The pattern into which data are systematically arranged for use on a computer.

Geographic Information System (GIS): A set of tools for collecting, storing, retrieving, transforming, and displaying spatial data from the real world for a particular set of circumstances.

Glacial Lake Outburst Flood (GLOF): Flood caused by the outburst of a glacial lake due to rapid accumulation of water in it, resulting to extreme damage in loss of lives and infrastructure in the downstream area.

Glacial Lake: As a result of glacier thinning and retreating, melt water gets accumulated at terminal moraines or on it covered by glacier ice, is known as glacial lake.

Glacier Erosion Lake: These are the water bodies formed in a depression after the glacier has retreated in a form of cirque or trough valley, might be isolated and far away from the present glaciated area, and mostly stable in nature.

Glacier: A perennial mass of ice, and possibly firn and snow, originating on the land surface by their crystallization of snow or other forms of solid precipitation and showing evidence of past or present flow (Cogley et al., 2011).

Global Positioning System (GPS): A GPS is a position-fixing system that uses the time taken for signals to travel from at least three GPS satellites in a known orbit to a receiver on the ground.

Hazard: The potential occurrence of a natural or human-induced physical event or trend or physical impact that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and environmental resources (Pandey, 2019).

Ice-dammed Lake: An Ice-dammed Lake is produced on the side(s) of a glacier, when an advancing glacier happens to intercept a tributary/tributaries pouring into a main glacier valley.

Impacts: The term impacts is used primarily to refer to the effects on natural and human systems of extreme weather and climate events and of climate change. Impacts generally refer to effects on lives, livelihoods, health, ecosystems, economies, societies, cultures, services and infrastructure due to the interaction of climate changes or hazardous climate events occurring within a specific time period and the vulnerability of an exposed society or system. Impacts are also referred to as consequences and outcomes. The impacts of climate change on geophysical systems, including floods, droughts and sea level rise, are a subset of impacts called physical impacts (Pandey, 2019).

Latitude: Angle measured in a north-south direction from the Earth's center to locations on the Earth's surface.

Longitude: Angle measured in an east-west direction from the Earth's center to locations on the Earth's surface.

Layer: Usually represents a theme or a feature type within the database.

Map: An abstract representation of the physical features of a portion of the Earth's surface graphically displayed on a planar surface. Map display signs, symbols and spatial relationships among the features.

Melt water: The liquid resulting from melting of ice, firn or snow (Cogley et al., 2011).

Moraine-dammed Lake: In the retreating process of a glacier, ice tends to melt in the lowest part of the glacier surrounded by Lateral-moraines and End-moraines, and forms into a lake known as Moraine-dammed Lake or Proglacial Lake.

Pixel: Smallest discrete element that makes up an image, generally represents either a small square or portion of the Earth's surface, scanned by satellite or aircraft.

Precipitation: Liquid or solid products of the condensation of water vapour that fall from clouds or are deposited from the air onto the surface (Cogley et al., 2011).

Remote sensing: The technique of obtaining data about the environment and surface of the earth from a distance, e.g. from an aircraft or satellite.

Resolution: It is the accuracy at which a given map scale can depict the location and shape of geographic features.

Retreat: Decrease of the length of a flow line (in case of glacier which is its terminus), measured from a fixed point. Advance is the opposite of retreat, that is, advance of the terminus (Cogley et al., 2011).

Risk: The potential for consequences where something of value is at stake and where the outcome is uncertain, recognizing the diversity of values. Risk is often represented as probability or likelihood of occurrence of hazardous events or trends multiplied by the impacts if these events or trends occur. In this report, the term risk is often used to refer to the potential, when the outcome is uncertain, for adverse consequences on lives, livelihoods, health, ecosystems and species, economic, social and cultural assets, services (including environmental services) and infrastructure (Pandey, 2019).

Scale: The ratio or fraction between the distance on a map, chart or photograph and the corresponding distance on the surface of the Earth.

Slope: A measure of change on surface value over distance, expressed in degrees or as a percentage.

Snow: Solid precipitation in the form of ice crystals, chiefly in complex branched hexagonal form and often agglomerated into snowflakes; or an accumulation of the same on the Earth's surface. It is also known as solid precipitation that has accumulated on the summer surface on a glacier and that transforms to firn at the end of the mass-balance year (Cogley et al., 2011).

Subglacial: Pertaining to the glacier bed or to the material below the bed (Cogley et al., 2011).

Supra-glacial Lake: Water bodies develop within the ice mass in any position of the glacier, but away from the terminal moraines are known as Supra-glacial lakes. Its basic characteristics are shifting, merging, and draining.

Terminus: The lowest end of a glacier, also called glacier snout, glacier front or glacier toe (Cogley et al., 2011).

Tongue: The lower, elongate part of a valley glacier or outlet glacier or a floating extension of a glacier or ice stream, laterally unconfined but markedly longer than wide (Cogley et al., 2011).

Topographic Map: A map showing the features that describes the surface of a particular place or region. It contains contours indicating lines of equal surface elevation (relief), often referred to a topo maps.

Vulnerability: The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (Pandey, 2019).