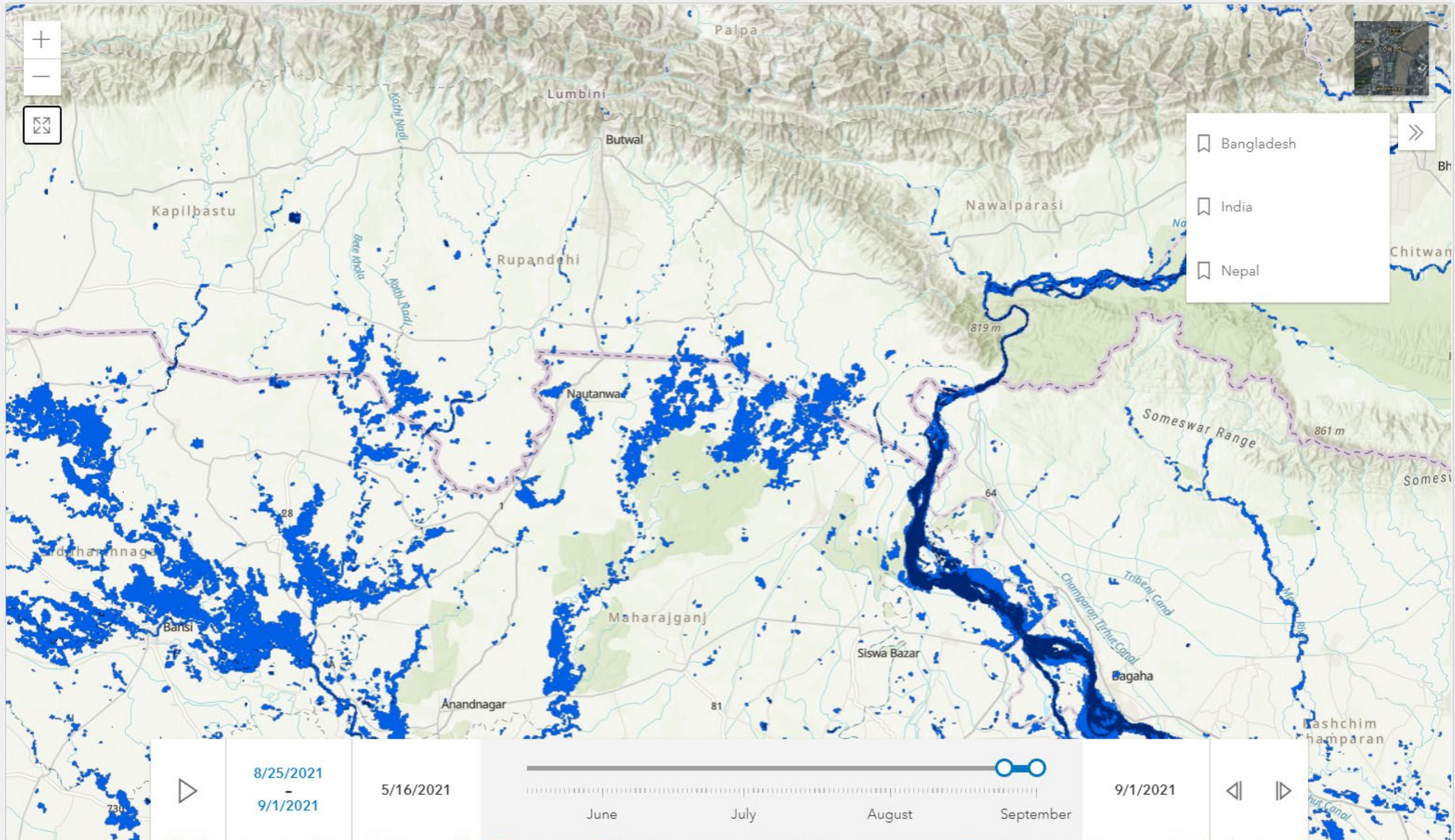


ICIMOD



Sudip Pradhan  
2 Sep 2021

# Geospatial Applications at ICIMOD



### Layers

- Flood Extent
- Perennial Waterbodies
- RGB Layer

### About

Floods are a major disaster in the Hindu Kush Himalaya (HKH) during monsoon season. Timely and accurate mapping of floods is important for efficient and effective management of relief activities.

[View More...](#)



# Forest Fire Detection and Monitoring System in Nepal

## Fire Incident Query

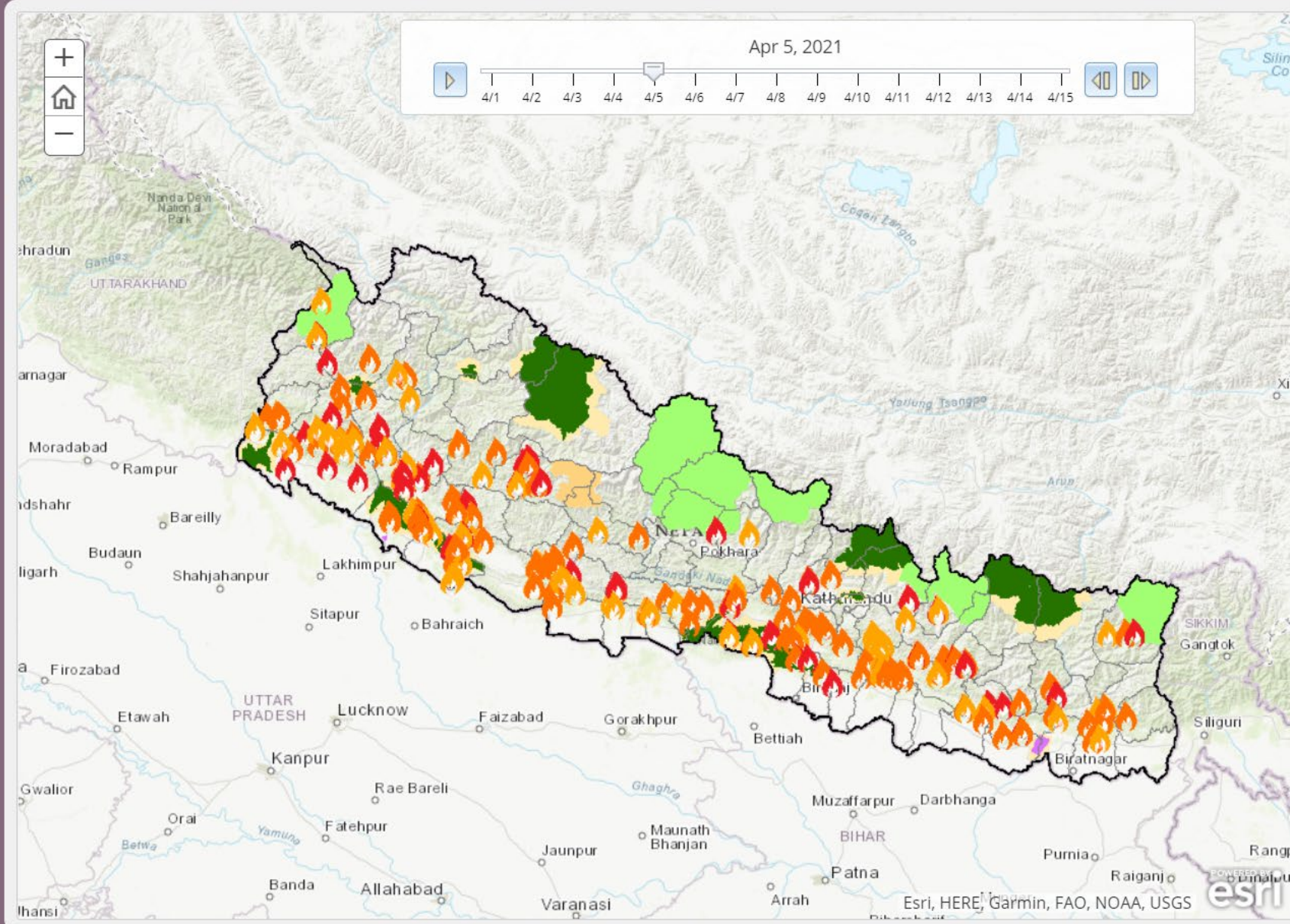
- Nepal
- Province
- Province-1
- District
- Achham
- Protected Area
- All
- Start Date: 4/1/2021
- End Date: 4/15/2021

View on Map

View on Table

## Fire Statistics (MODIS) 235

| District     | Count |
|--------------|-------|
| Achham       | 10    |
| Arghakhanchi | 4     |
| Baglung      | 2     |
| Bajhang      | 2     |
| Bairavi      | 2     |



## Layer Legend Basemap

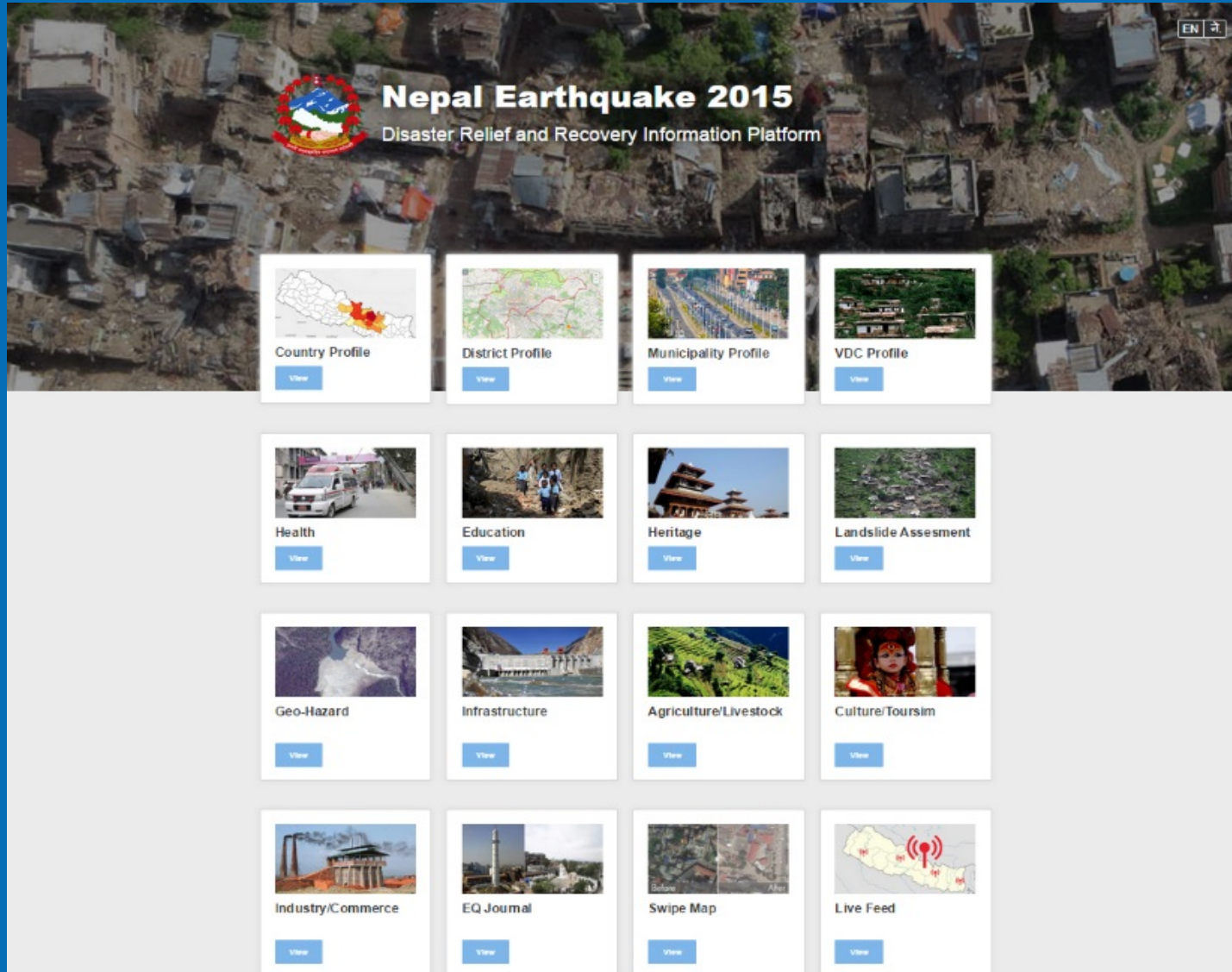
- Country Outline
- Province
- District
- District Labels
- Gaunpalika/Nagarpalika
- Division
- Sub-Division
- Ward
- Airport
- Settlement
- Road
- Protected Area
- Protected Area Label
- MODIS Active Fire
- Viirs Active Fire
- MODIS Non-forest Fire
- Fire Risk - VDC
- Fire Risk - District

## About

ICIMOD, in close collaboration with the Department of Forests & Soil Conservation (DoFSC) and Ministry Forest & Environment (MoFE), Government of Nepal has jointly developed this "Online Web Mapping Application".

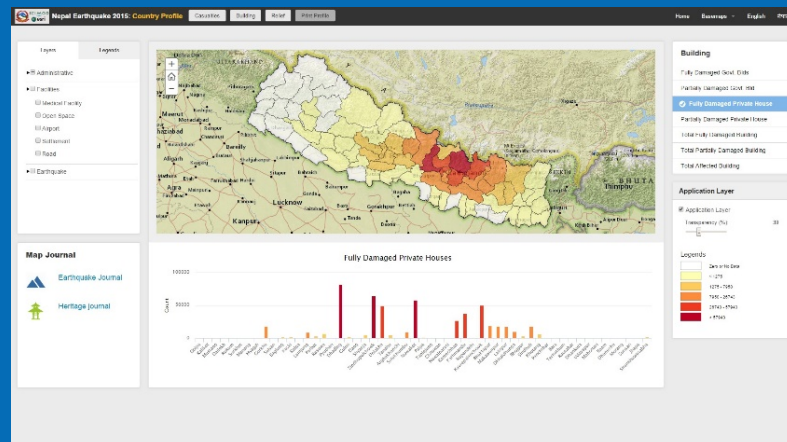
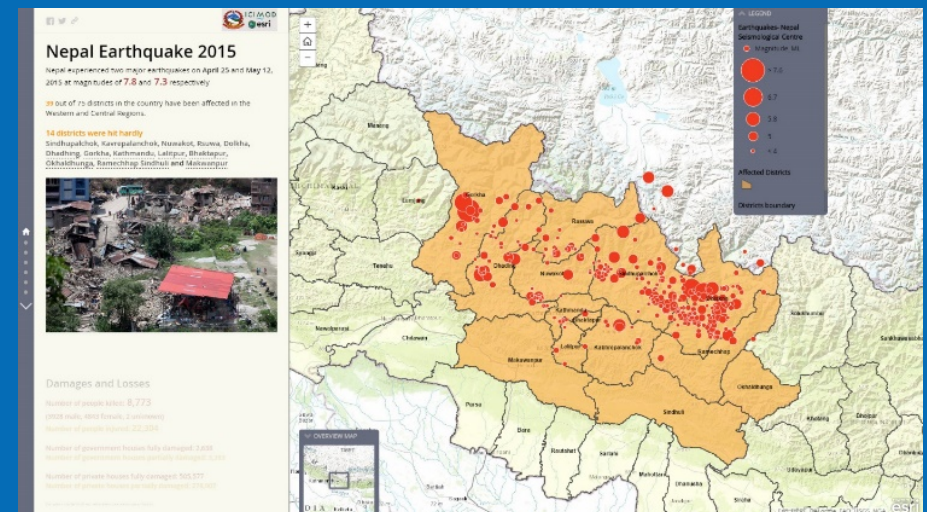
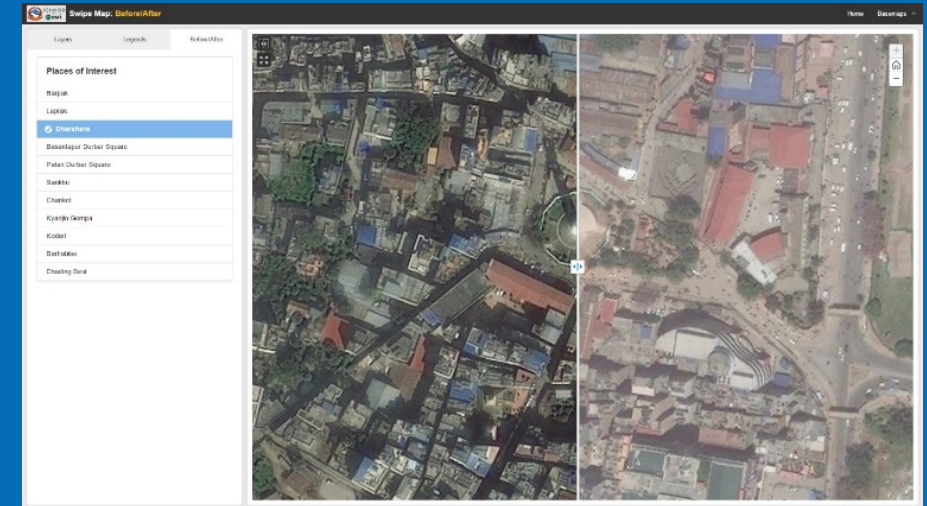
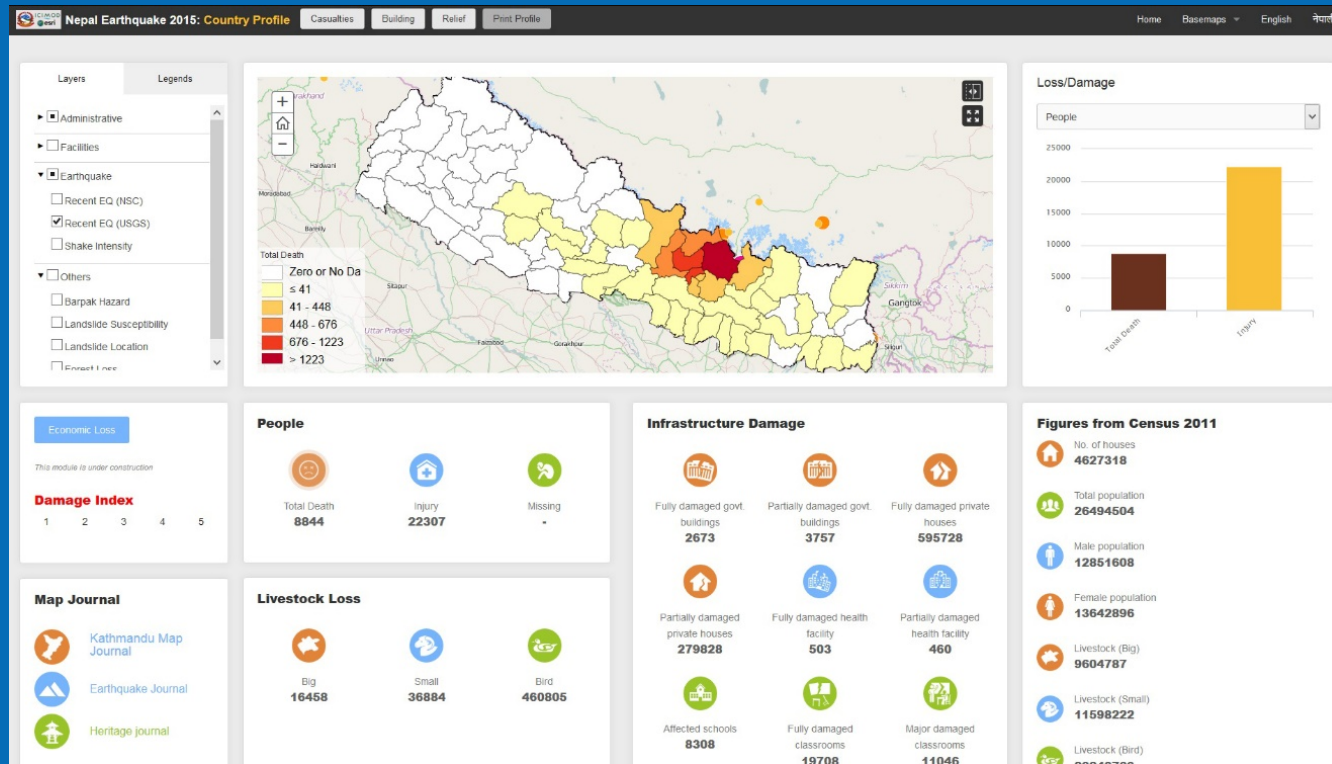
The web tool provides historical forest fire information as well as real-

# Nepal Earthquake 2015



- Integration of data and information at the national level
- Interactive Profile, story map journal and visualization
- A single Gateway for timely and credible information for decision support
- Transparency, Accountability and Social Audit
- Information and as “public good”

# Nepal Earthquake 2015



## Summary Statistics

Bhutan

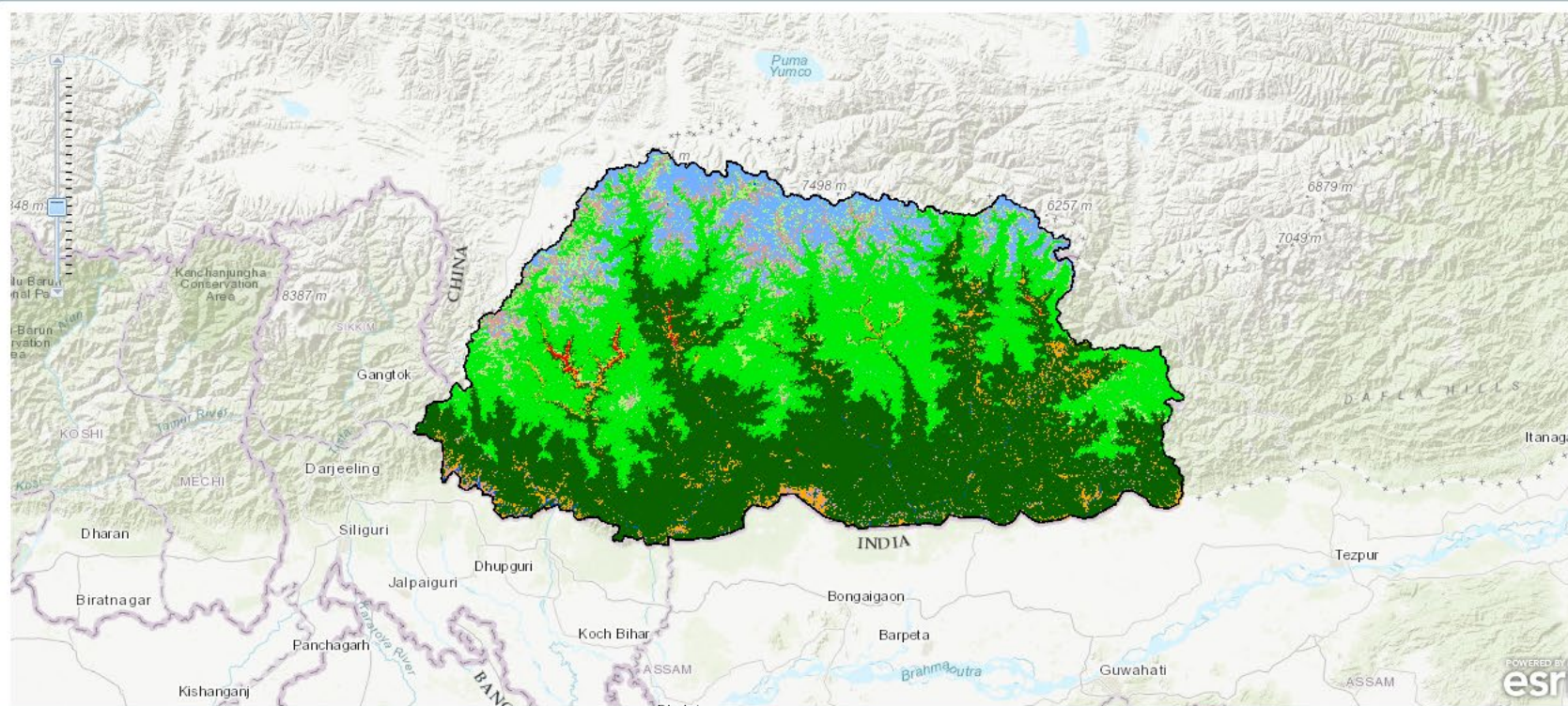
Select District

Bumthang

View Statistics

Change Statistics

Swipe Tool



## Land Cover Dynamics in Bhutan

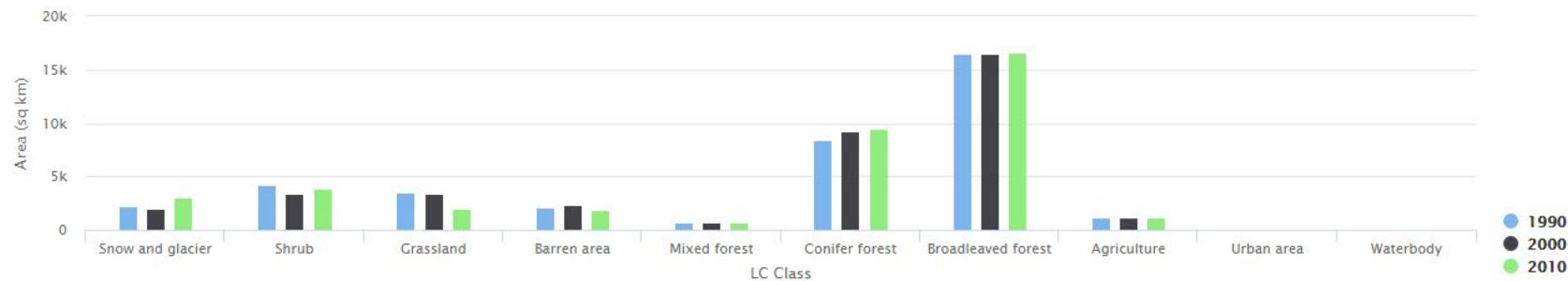
Assessment and monitoring of land cover dynamics are essential for the sustainable management of natural resources, environmental protection, biodiversity conservation, and developing sustainable livelihoods, particularly for the rural communities in the Hindu Kush-Himalayan region.

The application provides easy access to the harmonised land cover database developed for Bhutan over different time slices (1990, 2000 and 2010) and provides user friendly tools for generating statistics to understand the change processes and to support the informed decisions.

Layer Legend

- HKH Outline
- Country Outline
- District
- Land Cover 2010
- Land Cover 2000
- Land Cover 1990

## Land Cover Distribution for Bhutan



## Related Dataset

- [Landcover Data of Bhutan 1990](#)
- [Landcover Data of Bhutan 2000](#)
- [Landcover Data of Bhutan 2010](#)

Zoom to District/VDC 

District

--Select-- 

VDC

--Select-- 



Relief 

LAYERS | LEGENDS



Administrative Layers

Outline

District

VDC

Biomass

Available (tons)

Demand (tons)

Balance

Base Layer

Population

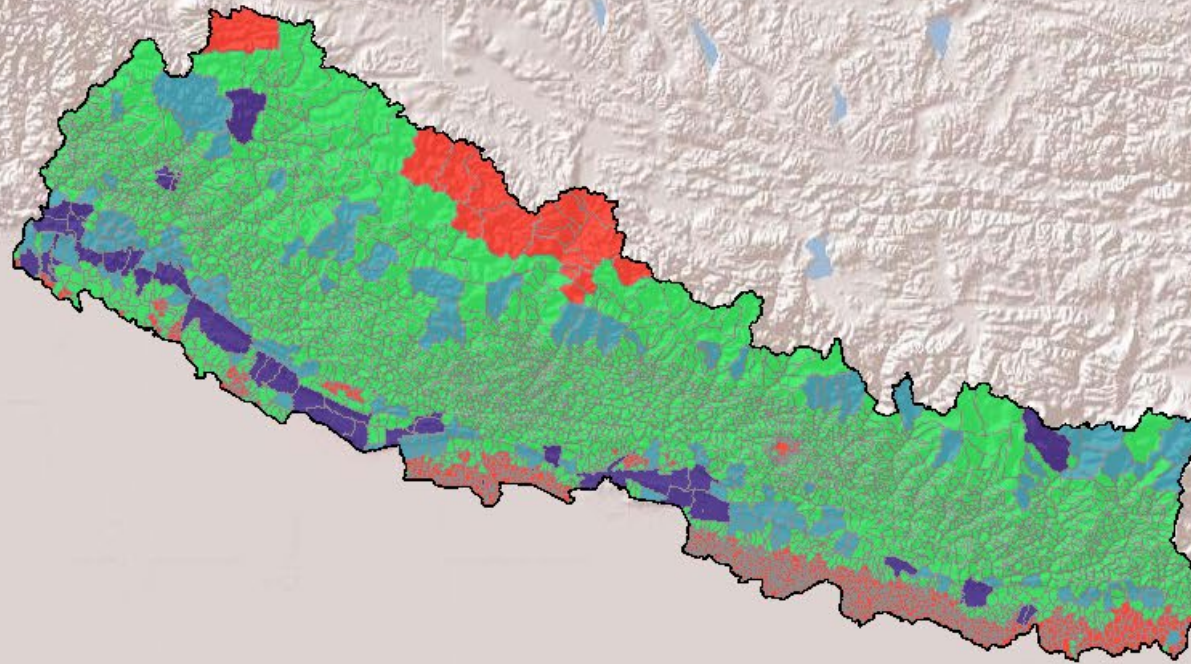
Above Ground Biomass (tons/ha)

Max. Canopy Height (m)

Carbon Stocks (tons/ha)

Forest Cover 2010

Elevation (m)





Base Maps ▾



## ▼ Agriculture Atlas of Nepal

Product Type: Cereal ▾

Product: Paddy ▾

Statistics:  Production  Area  Yield

Classes: 5 ▾

Classification Method: Natural Break ▾

Year: 1979/80 2018/19

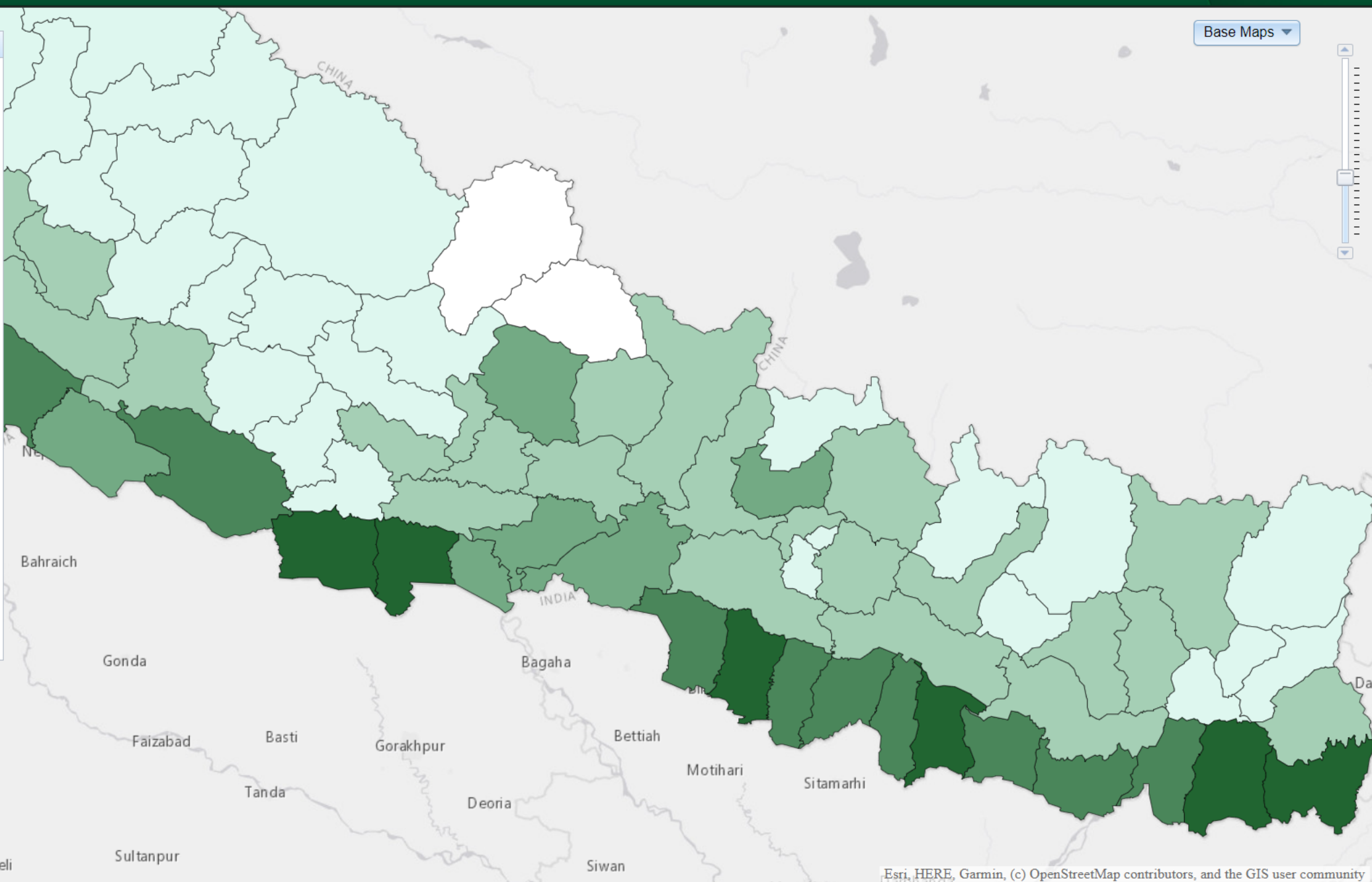
District Label

### Legend

Paddy Production (mt)

- None
- <= 25612
- 25612 - 71960
- 71960 - 134500
- 134500 - 221340
- > 221340

**Note:**  
The application currently contains data on cereal crops from 1979/80 to 2018/19 and other crops and livestock from 2003/04 to 2018/19.







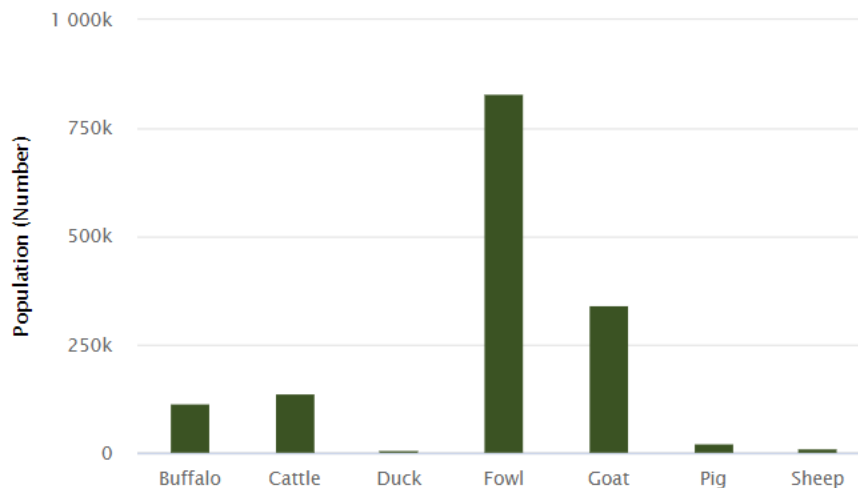
Press **F11** to exit full screen

ABCDEFGHIJKLMNPRSTUW

- DISTRICTS
- Kailali
- Kalikot
- Kanchanpur
- Kapilbastu**
- Kaski
- Kathmandu
- Kavre
- Khotang

# Kapilbastu

### Livestock Population (2018/19)



Product Group:

Product Type:

Year:   2018/19

### Key District Information

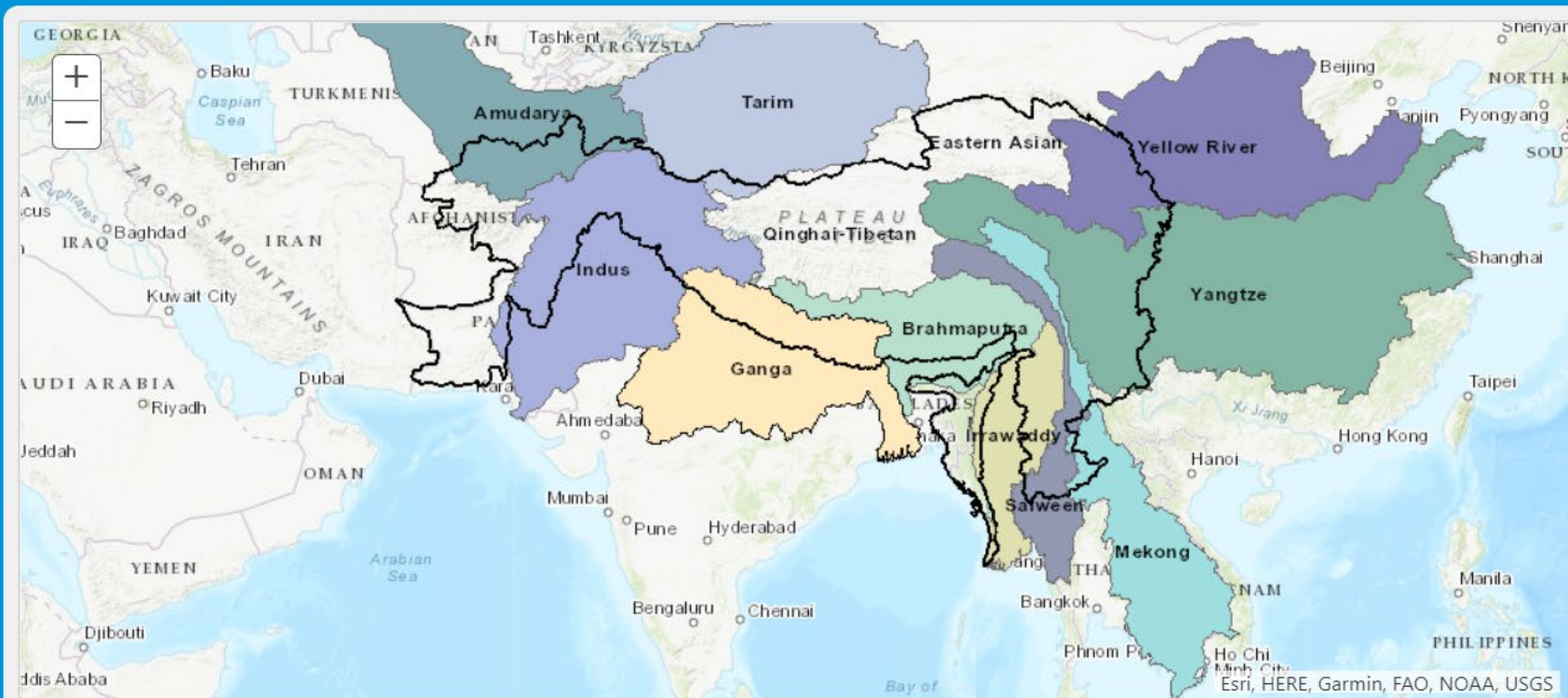
|                  |           |
|------------------|-----------|
| Population:      | 571936    |
| Male:            | 285599    |
| Female:          | 286337    |
| Household No.:   | 91321     |
| Area (sq km):    | 1738      |
| Elev. Range (m): | 79 - 1489 |



## Glacier Statistics

- Major Basin
- All Major Basin ▼
- Basin
- Select Basin ▼
- Cut Off
- Elevation: 5000 m.
- Slope: 40
- Aspect: S

View Statistics



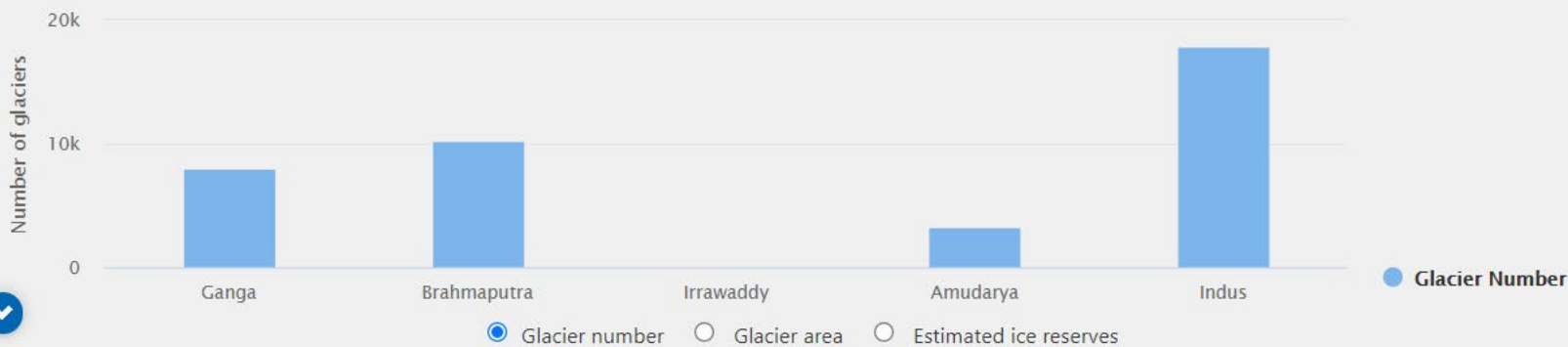
## Layer Legend

- HKH boundary
- Major-basin
- Basin
- Sub-basin
- Glaciers

## Related Dataset

- Glacier of Amudarya
- Glacier of Brahmaputra
- Glacier of Ganges
- Glacier of Indus
- Glacier of Irrawaddy

Summary graph for major basins of HKH



## About

The comprehensive baseline information on the glaciers of the entire HKH region have been organised by major basins and sub-basins. The application showcases glacier data of HKH region as interactive maps.

[View More...](#)

## Glacier Statistics

Bhutan

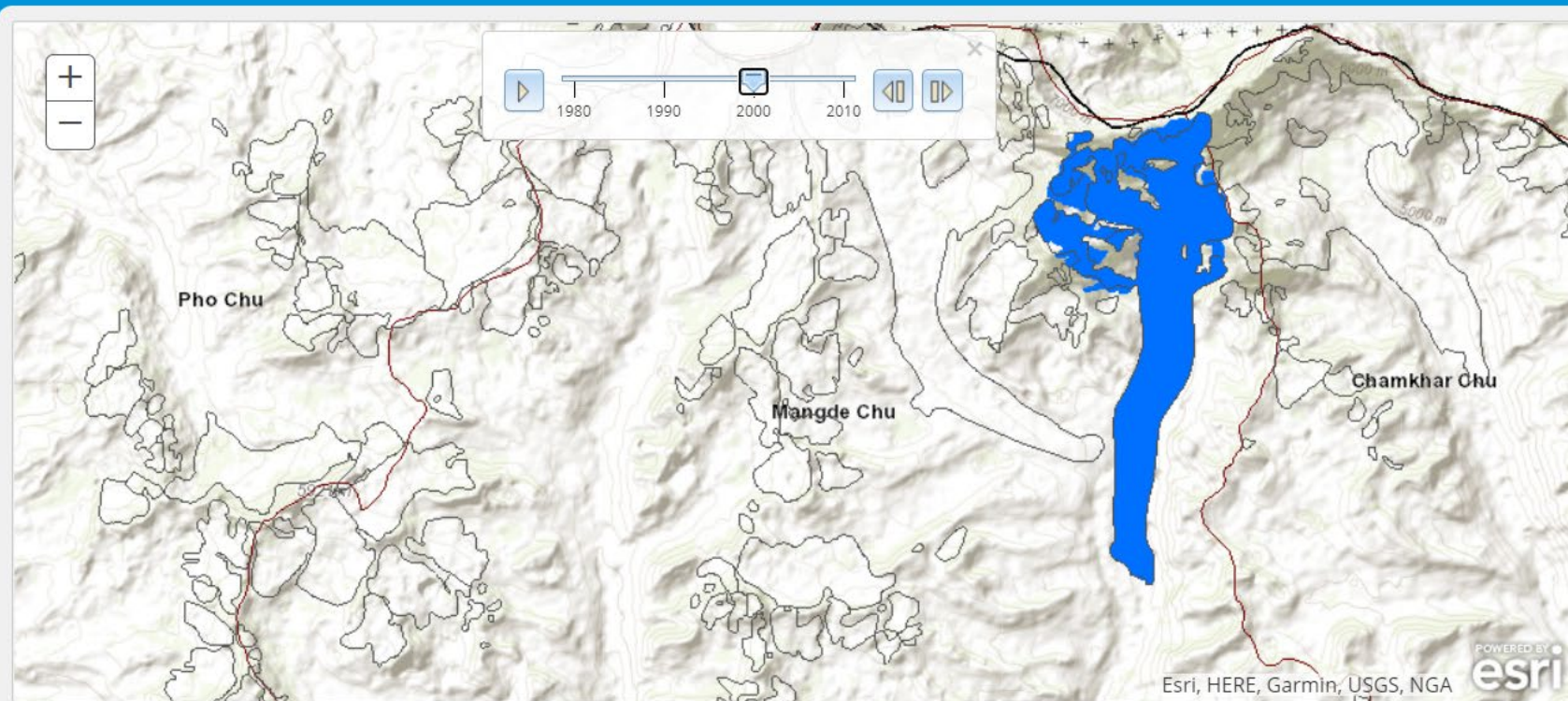
Select Basin

Manas

Select SubBasin

Chamkhar Chu

View Statistics



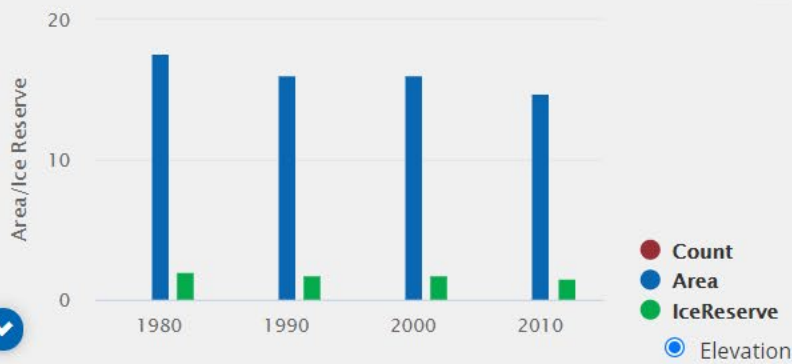
## Layer Legend

- Country Outline
- Basin
- SubBasin
- River Network
- Glacier 2010
- Glacier 2000
- Glacier 1990
- Glacier 1980

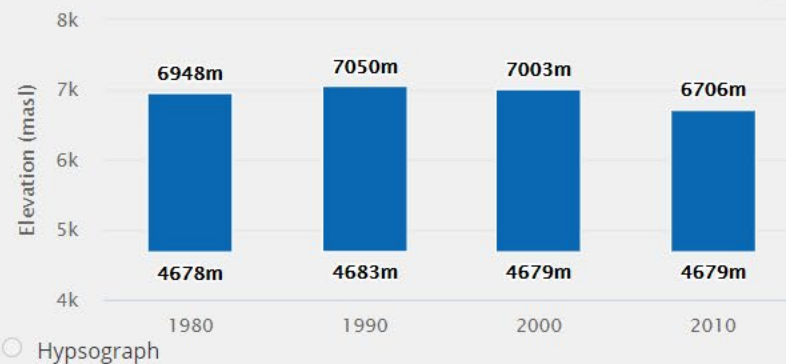
## Related Dataset

- Glaciers of Bhutan 1980
- Glaciers of Bhutan 1990
- Glaciers of Bhutan 2000
- Glaciers of Bhutan 2010

### Glacier Area/Ice Reserve in G090476E28005N



### Glacier Elevation Range in G090476E28005N



## About

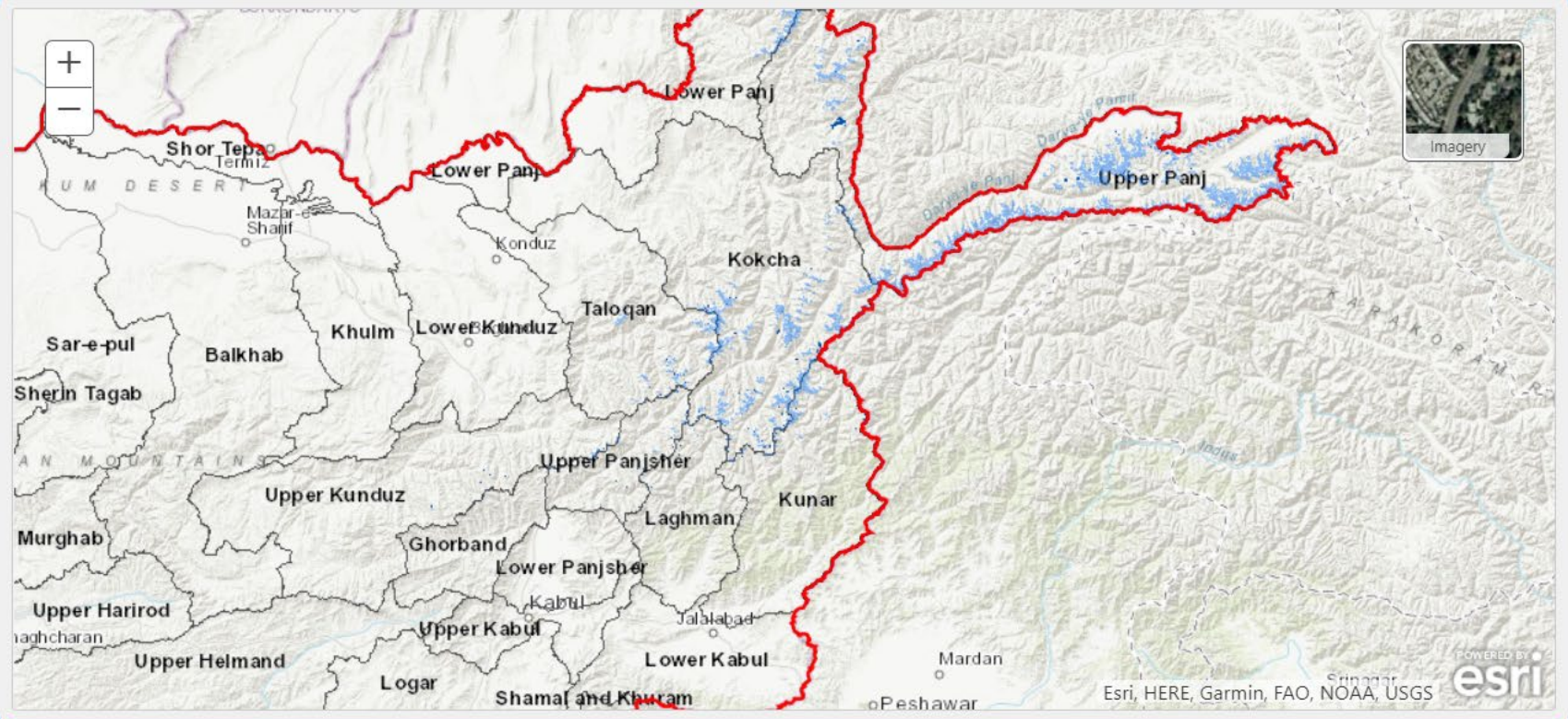
The application showcases changes in the glaciers in Bhutan from 1980, 1990, 2000, and 2010. The interactive glacier maps were prepared for four decades using a uniform data set and methodology, which provide a scientific basis for understanding the changes taking place in the glacial environment in the Himalayas.

# Glacial Lakes in Afghanistan



## Glacial lake statistics

- Afghanistan
- Select basin
- Kabul Indus
- Select sub-basin
- Ghorband
- [View statistics](#)

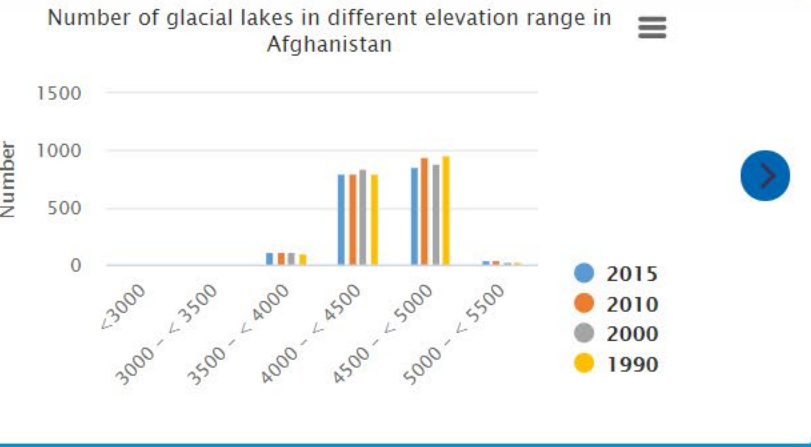
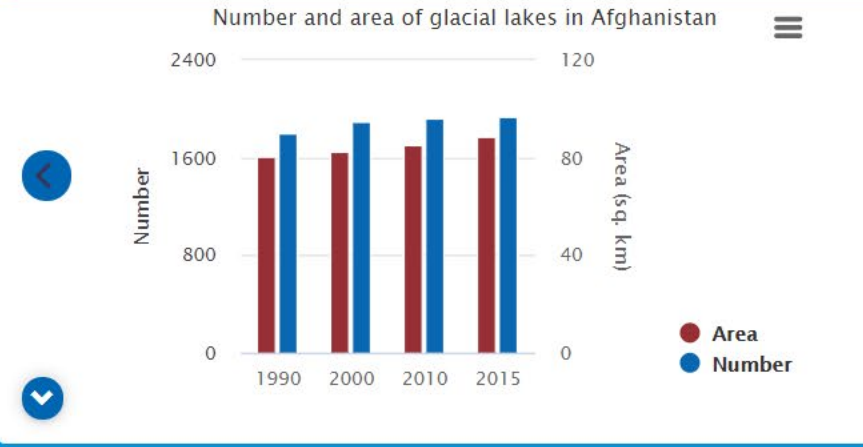


## Layer Legend

- Country outline
- Basin
- Sub-basin
- Glacial lakes 2015
- Glacial lakes 2010
- Glacial lakes 2000
- Glacial lakes 1990
- Glaciers 2015
- Glaciers 2010
- Glaciers 2000
- Glaciers 1990

## Related datasets

- Glacial lakes in the Hindu Kush Himalaya
- Glacial lakes in the Koshi, Gandaki, and Karnali river basins of Nepal, the Tibet autonomous region of China, and India
- Potentially dangerous glacial lakes in the Koshi, Gandaki, and Karnali river basins of Nepal, the Tibet



## About

The National Water Affairs Regulation Authority (NWARA) and ICIMOD worked together to develop information on glaciers and glacial lakes in Afghanistan through ICIMOD's SERVIR Hindu Kush Himalaya (SERVIR-HKH) Initiative. Afghanistan's glacier dataset (1990–2015) was released in 2018. The General Directorate of Water Resources of NWARA and ICIMOD then prepared

# Climate Change Scenario for Nepal

National Adaptation Plan (NAP) - Nepal



## Parameters

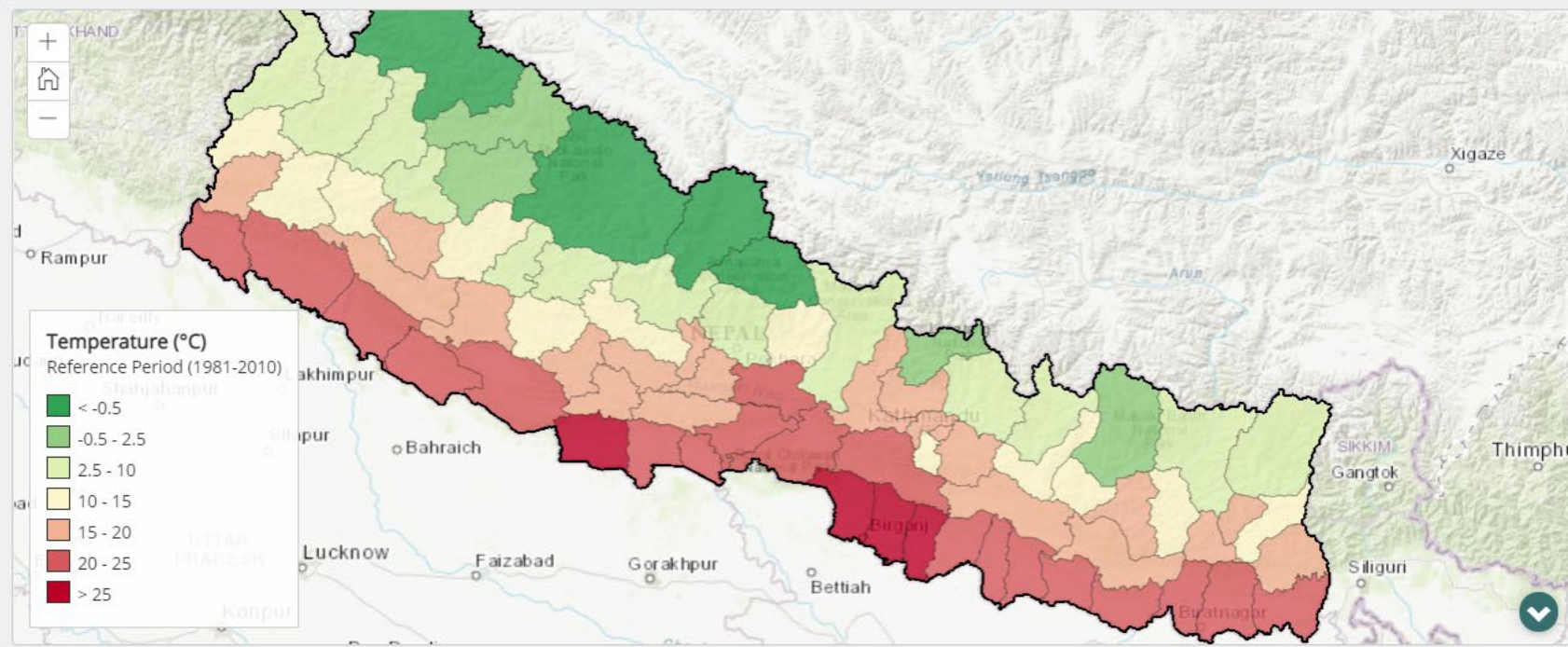
Measurement

Temperature

Time Period

Reference Period (1981-2010)

[View Nepal Statistics](#)



### Temperature (°C)

Reference Period (1981-2010)

- < -0.5
- -0.5 - 2.5
- 2.5 - 10
- 10 - 15
- 15 - 20
- 20 - 25
- > 25

## Base Layers Legend

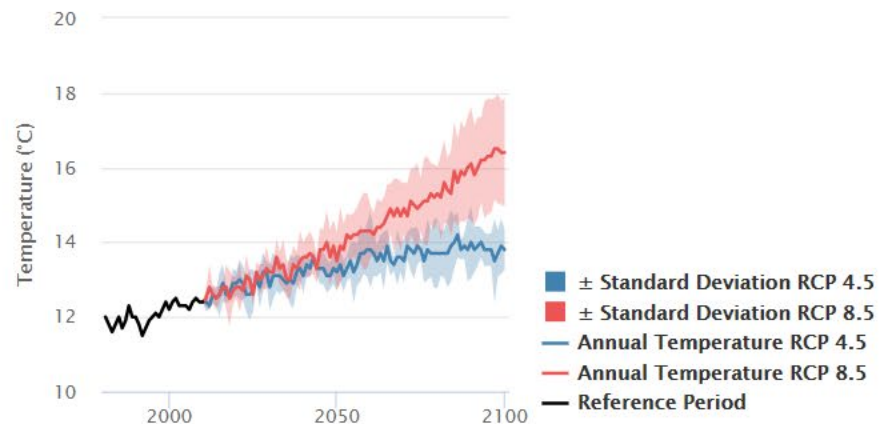
- Country Outline
- Province
- District Label

## Data Report

[Precipitation data from Climate Scenarios for Nepal \(NAP\)](#)

[Temperature data from Climate Scenarios for Nepal \(NAP\)](#)

## Ensemble Mean of Annual Temperature for Nepal



## Temperature Change for Nepal

| Scenario | Reference Period (1981-2010) | Medium Term (2016-2045) | Long Term (2036-2065) |
|----------|------------------------------|-------------------------|-----------------------|
|          | (°C)                         | Change (°C)             | Change (°C)           |
| RCP 4.5  | 12.1                         | 0.92                    | 1.3                   |
| RCP 8.5  | 12.1                         | 1.07                    | 1.82                  |

## About

The data presented here are a part of Climate Change Scenarios for Nepal report which has been developed through the collaborative efforts of the MoFE, the Department of Hydrology and Meteorology (DHM), the International Centre for Integrated Mountain Development (ICIMOD), FutureWater, the NAP expert team, Action on Climate Today, and Practical



### Tool Control

Nepal

Province:

District:

[View Statistics](#)



### General Information

- Total population: **30,114,254**
- Area: **14,751,600 ha**
- Elevation Range: **57 - 8,848 m**

### Base Layers Legend

- Outline
- Province
- District
- Settlement
- Airport
- Road
- Protected Area

### Land Cover 2010

| Forest (ha)         | Agriculture (ha)    | Grassland (ha)     | Shrubland (ha)      |
|---------------------|---------------------|--------------------|---------------------|
| <b>6,199,164.04</b> | <b>4,032,367.86</b> | 1,539,996.6        | <b>342,672.32</b>   |
| Water (ha)          | Snow (ha)           | Built-up Area (ha) | Barren Land (ha)    |
| <b>77,653.48</b>    | 1,250,602.21        | <b>54,337.63</b>   | <b>1,256,831.39</b> |

### Ren. Energy & Low Carbon Tech.

- Hydropower: **1,120 MW**
- Ann. PV Potential: **1,485.91 kWh/kWp**
- Brick Kilns: **1,058**

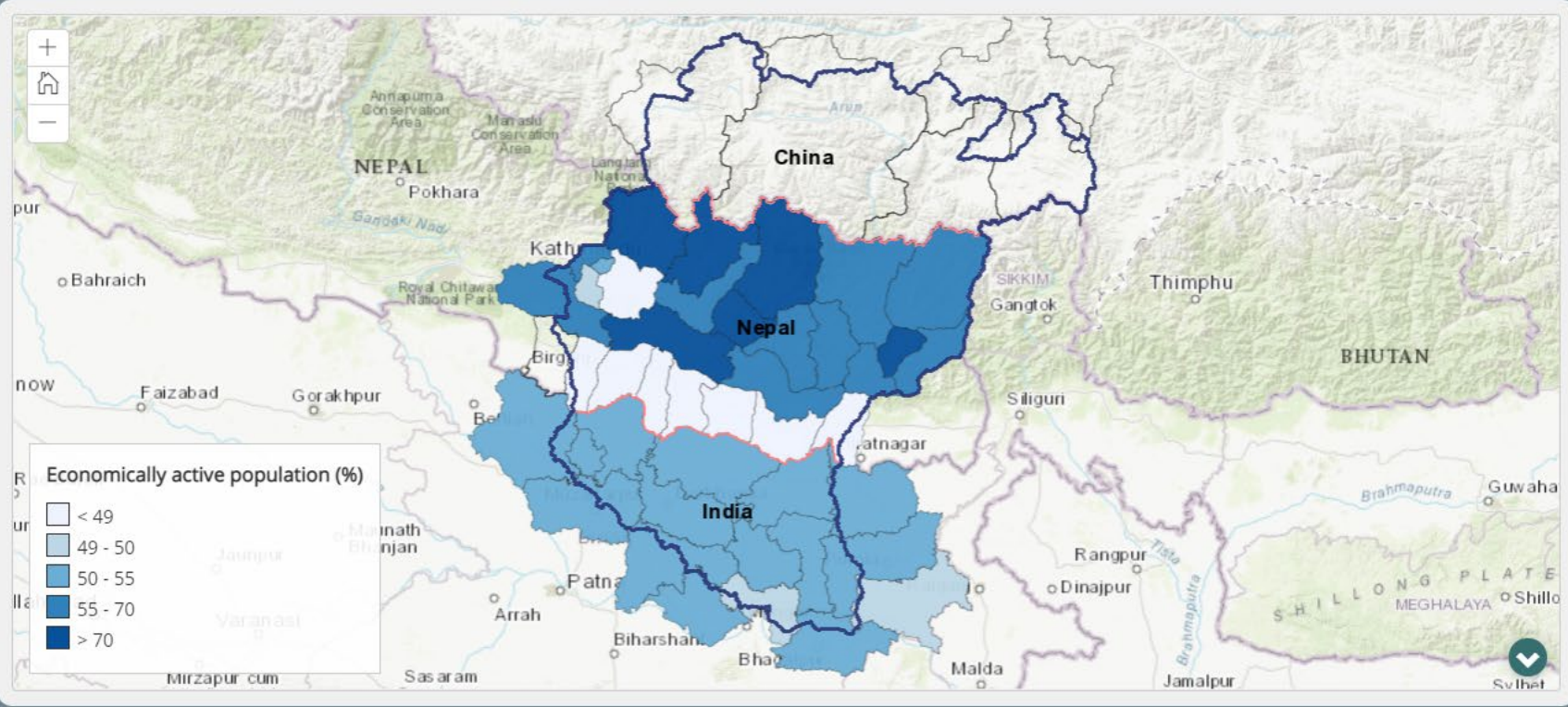
### Parameters

Indicator-1 (X-Axis)  
Economically active popula **▼**  
2011-2011 **▼**

Indicator-2 (Y-Axis)  
Literacy rate (%) **▼**  
2011-2011 **▼**

Indicator-3 (Bubble Size)  
Poverty incidence (%) **▼**  
2011-2011 **▼**

View on Map  
Indicator-1: Economically a **▼**

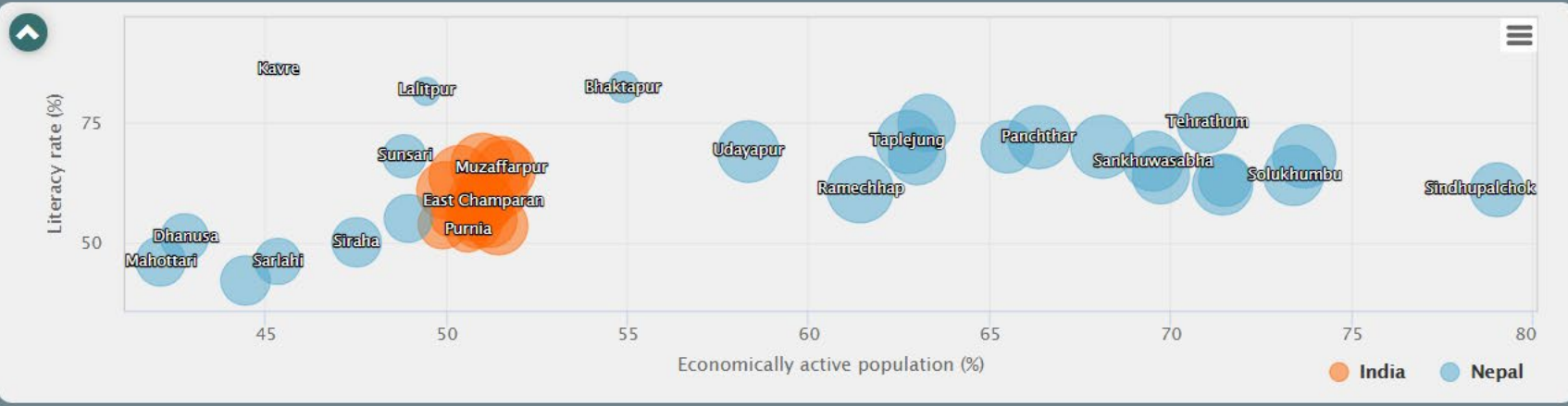


### Base Layers | Legend

- Koshi Basin
- Country Boundary
- Sub-Basin
- District
- Peaks
- Road
- Drainage Network
- Development Pressure
- Ecological Health
- Management Capacity
- Resource Stress Index
- Vulnerability Index

### Useful Links

- [Bihar Economic Survey](#)
- [Statistical Informaiton on Nepalese Agriculture](#)



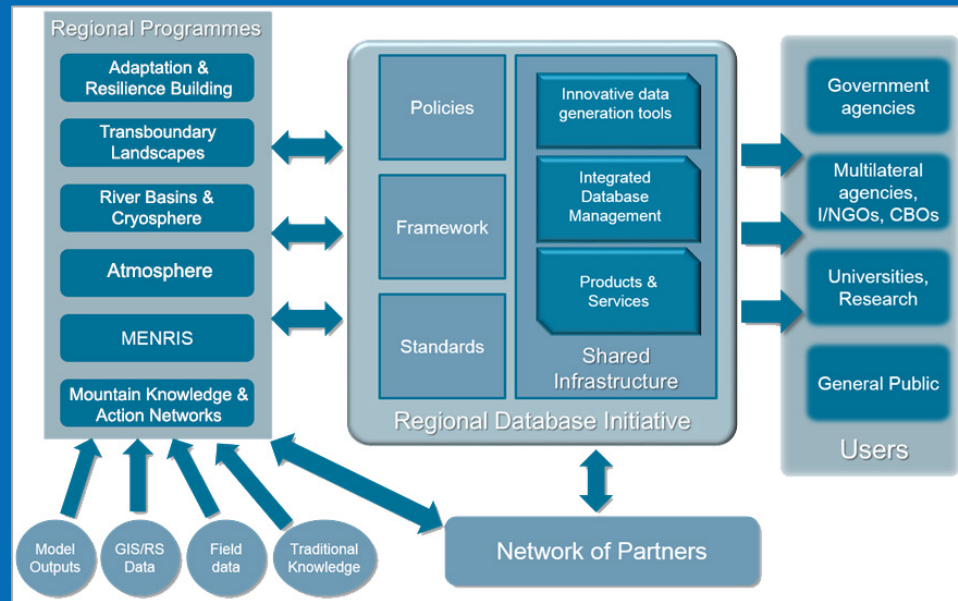
### About

The application allows users to view statistics based on socio economic data within the Koshi basin. Users can change the variables of their choice from the list to view on chart and map.

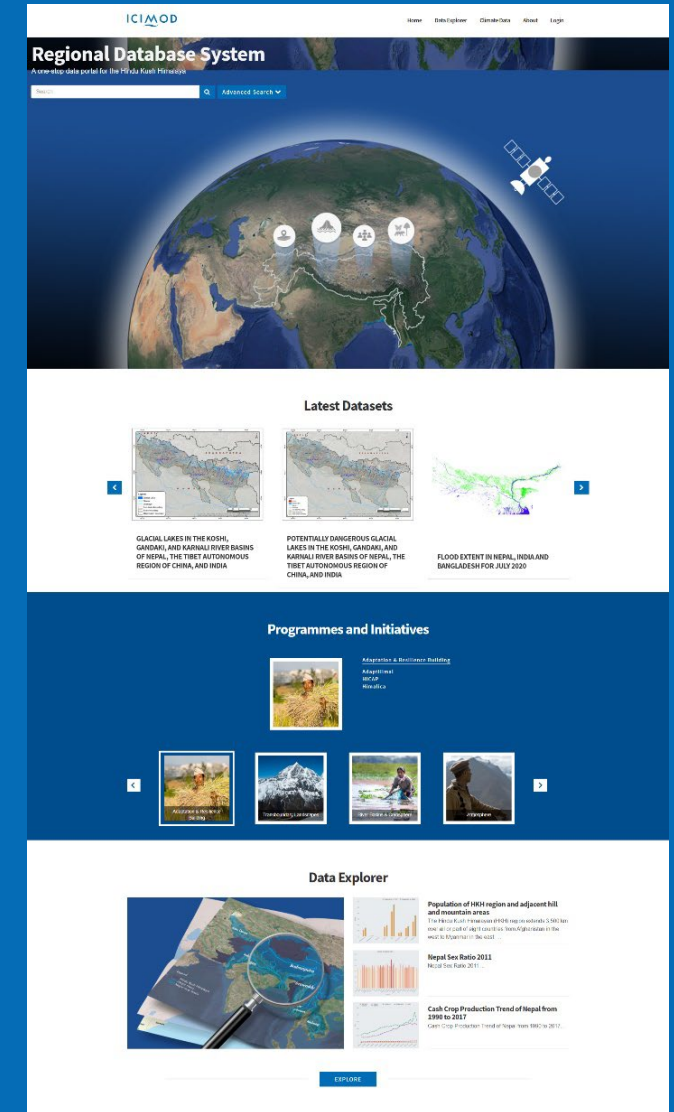
[View More...](#)

# Regional Database System

- A central data repository for different thematic areas in the HKH region
- Provides easy access to the data through the RDS portal.
- RDS Portal linked to regional and global data sharing platforms (e.g. Bhutan Geospatial Portal, GEOSS Geoportal).
- ICIMOD's data sharing policy aligned with the philosophy of open and free access to scientific information and knowledge.



Regional Database Framework





Thank You

