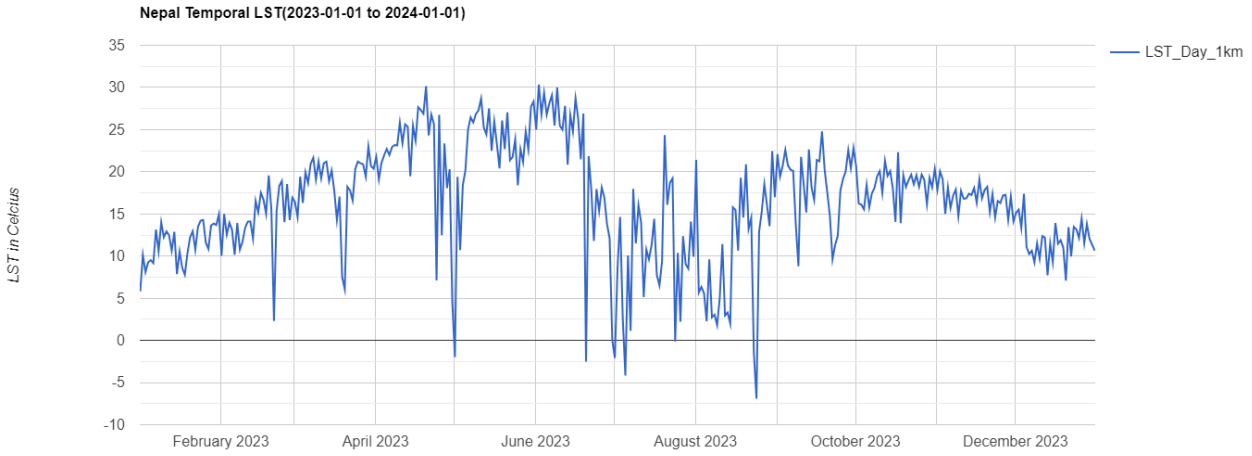
Land Surface Temperature Analysis

Code Used for LST Analysis

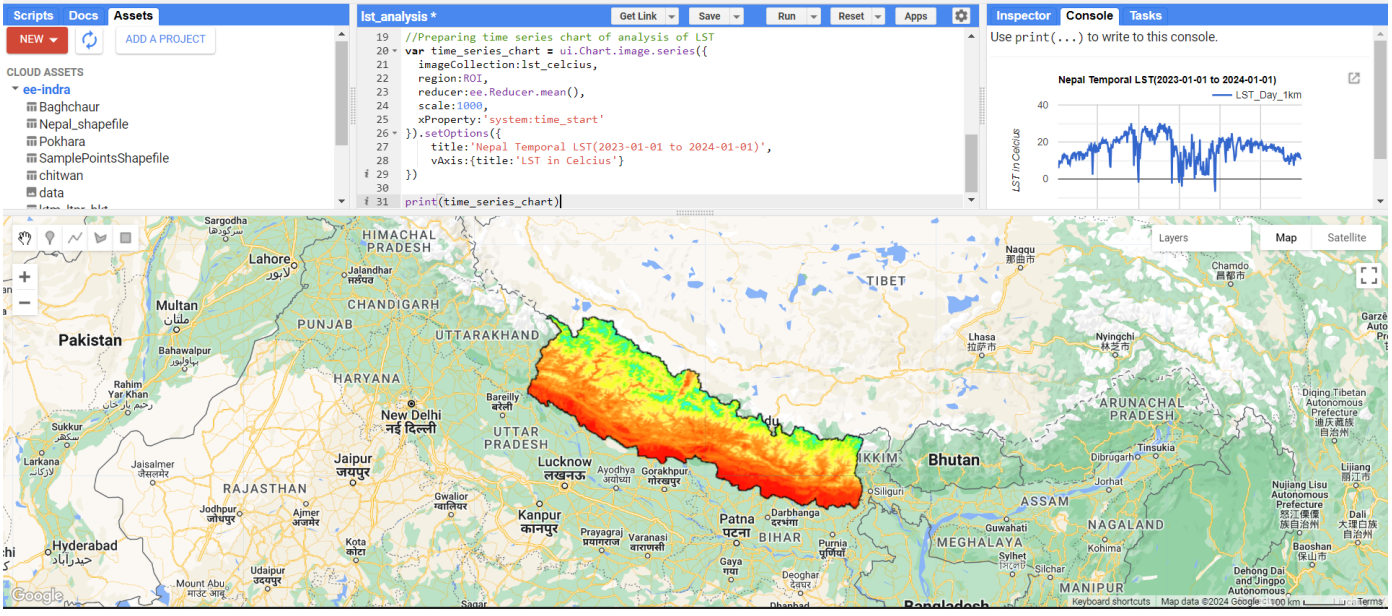
```
//Adding region of interest layer
Map.addLayer(ROI)
Map.centerObject(ROI)

//Importing LST image (MODIS 1km daily)
var modis_lst = ee.ImageCollection("MODIS/061/MOD11A1")
.filterDate('2023-01-01','2024-01-01').select('LST_Day_1km')

//Conversion of image collections in kelvin to degree celcius
var lst_celcius = modis_lst.map(function(img)
{
return img.multiply(0.02).subtract(273.15).copyProperties(img,['system:time_start'])
})

//Visualization of image collection
var mean_lst = lst_celcius.mean().clip(ROI)
Map.addLayer(mean_lst,imageVisParam2,'Mean Land Surface Temperature')

//Preparing time series chart of analysis of LST
var time_series_chart = ui.Chart.image.series({
imageCollection:lst_celcius,
region:ROI,
reducer:ee.Reducer.mean(),
scale:1000,
xProperty:'system:time_start'
}).setOptions({
title:'Nepal Temporal LST(2023-01-01 to 2024-01-01)',
vAxis:{title:'LST in Celcius'}
})

print(time_series_chart)

//Export image
Export.image.toDrive({
image:mean_lst,
folder:'GEE',
scale:10,
```

region:ROI,
maxPixels: 1e13,
crs:'EPSG:4326'
})

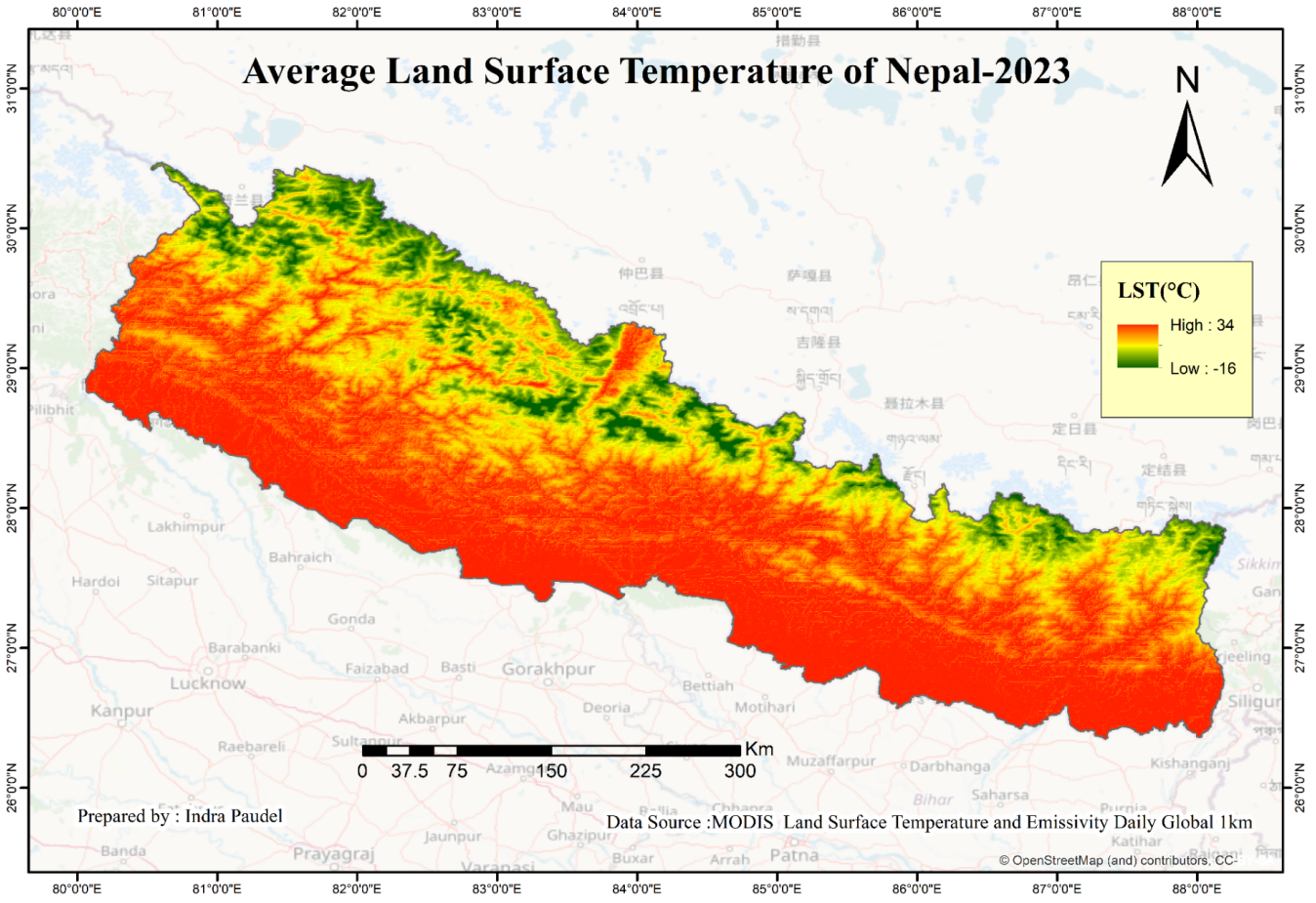
Chart representing LST of Nepal (2023-01-01 to 2024-01-01)



Snapshot of Work and Visualization in GEE:



Final Map Prepared using Arcgis:


Average Land Surface Temperature of Nepal-2023
N
LST(°C)
High : 34
Low : -16
0 37.5 75 150 225 300
Km
Prepared by : Indra Paudel
Data Source :MODIS Land Surface Temperature and Emissivity Daily Global 1km
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80°0'0"E
81°0'0"E
82°0'0"E
83°0'0"E
84°0'0"E
85°0'0"E
86°0'0"E
87°0'0"E
88°0'0"E
31°0'0"N
30°0'0"N
29°0'0"N
28°0'0"N
27°0'0"N
26°0'0"N
Lakhimpur
Bahraich
Hardoi
Sitapur
Gonda
Barabanki
Faizabad
Basti
Gorakhpur
Lucknow
Kanpur
Akbarpur
Raebareli
Sultanpur
Deoria
Bettiah
Motihari
Muzaffarpur
Darbhanga
Kishanganj
Saharsa
Bihar
Jaunpur
Ghazipur
Prayagraj
Varanasi
Buxar
Arrah
Patna
Katihar
Purnia
Siliguri
Darjeeling
Sikkim