

# GIS project

## INTRODUCTION:

- Geographic Information System also known as GIS is defined as an integrated tool, capable of mapping, analysing, manipulating and storing geographical data in order to provide solutions to real world problems and helps in planning for the future.
- GIS allows users to organize, visualize and analyse different layers of data by creating maps and scenes.

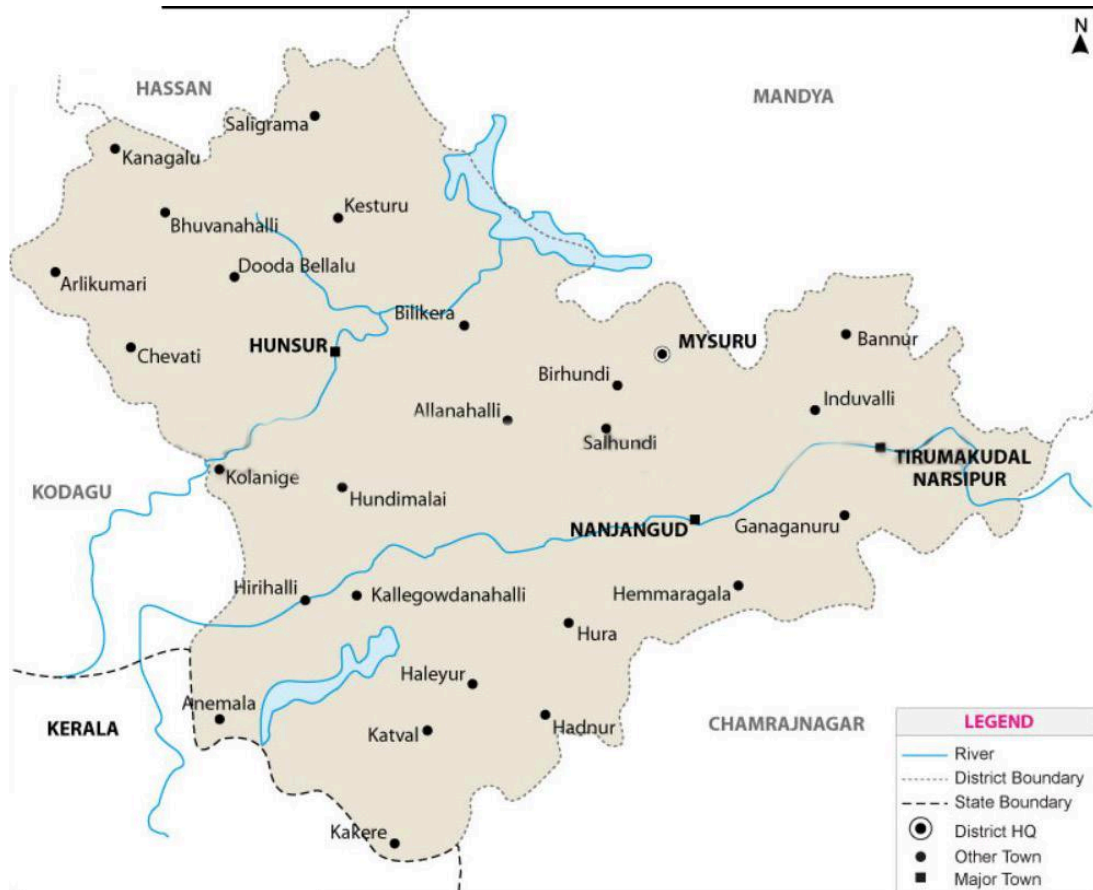
## AIM AND OBJECTIVE:

The main objectives of the project are:

- To prepare plan for the specified area considering following utilities:
  1. Underground drainage works
  2. Sanitary layout
  3. Water supply
- Enabling the urban plan to meet the above requirements.
- Creating a database at urban local body level for maintaining and management.
- To provide a healthy environment for economic and social welfare.

## METHODOLOGY and TOOLS ( ArcGIS & QGIS ):

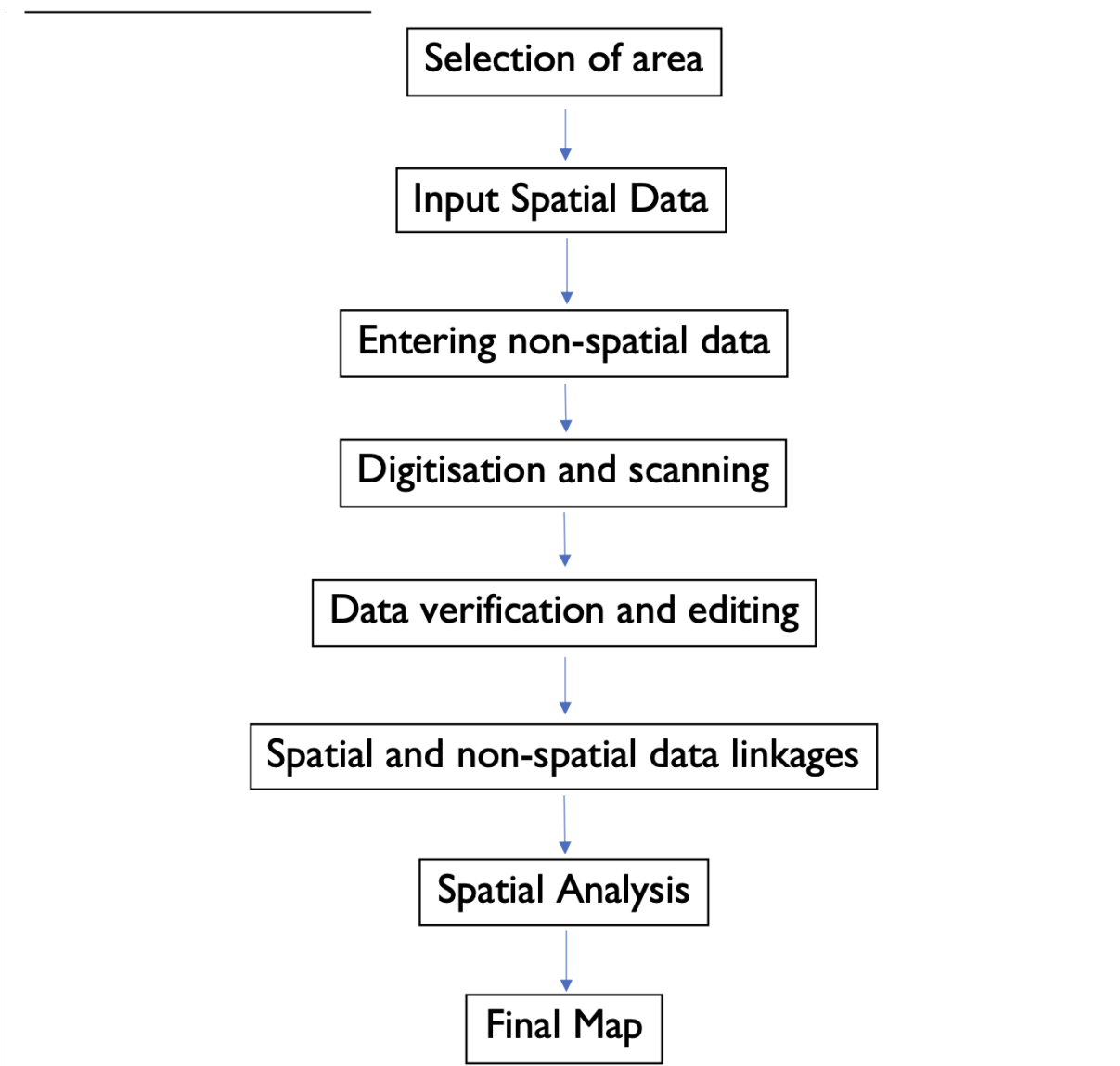
- GIS Online is a cloud-based mapping and analysis solution. Use it to make maps, analyze data, and to share and collaborate. Get access to workflow-specific apps, maps and data from around the globe, and tools for being mobile in the field.
- A specified area in Mysore is selected for the study. Field visits are done to collect the ground co-ordinates of the necessary facilities which has to be provided.
- The Location of the selected area will be used for the generation of spatial distribution maps, as always as followed by non-spatial data collection.
- GIS techniques used to integrate and analyse various data of spatial and non-spatial types within the exact location of selected area.
- GIS analyses the data and gives the final render of the map of the selected area.



## WORKFLOW:

- Selection of area
- Collecting physical maps of selected area
- Collecting digital data from the concerned authority
- Visiting selected area to collect field data
- Loading the collected data to ArcGIS & QGIS software
- Excavating the map of the selected area
- Performing overly operation resulting data indication
- Final map of utility plan is obtained

## MIND MAPPING:



## DESCRIPTION:

The study was carried out under the supervision of Dr. P Nanjundaswamy, who have 30 years of experience in the field of civil engineering and have delivered lectures on Geospatial Technologies, have handled laboratories on Design Studio and Computer Application of Civil Engineering.

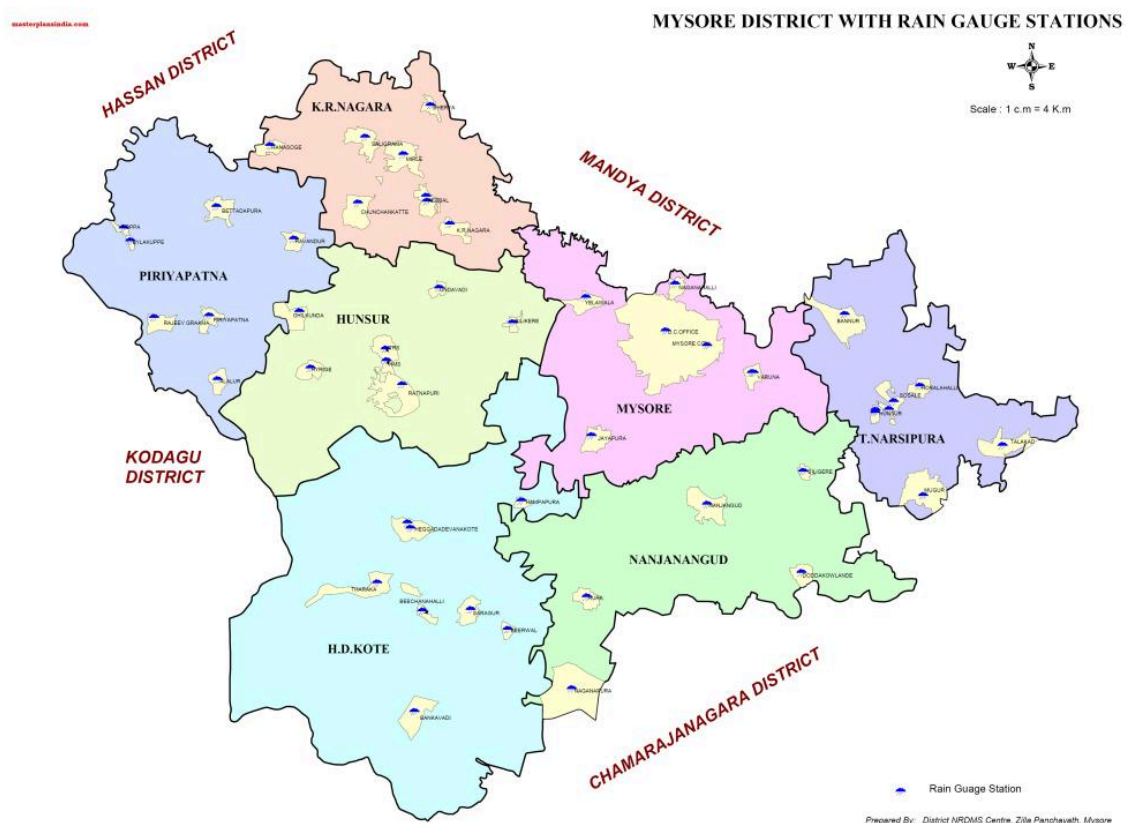
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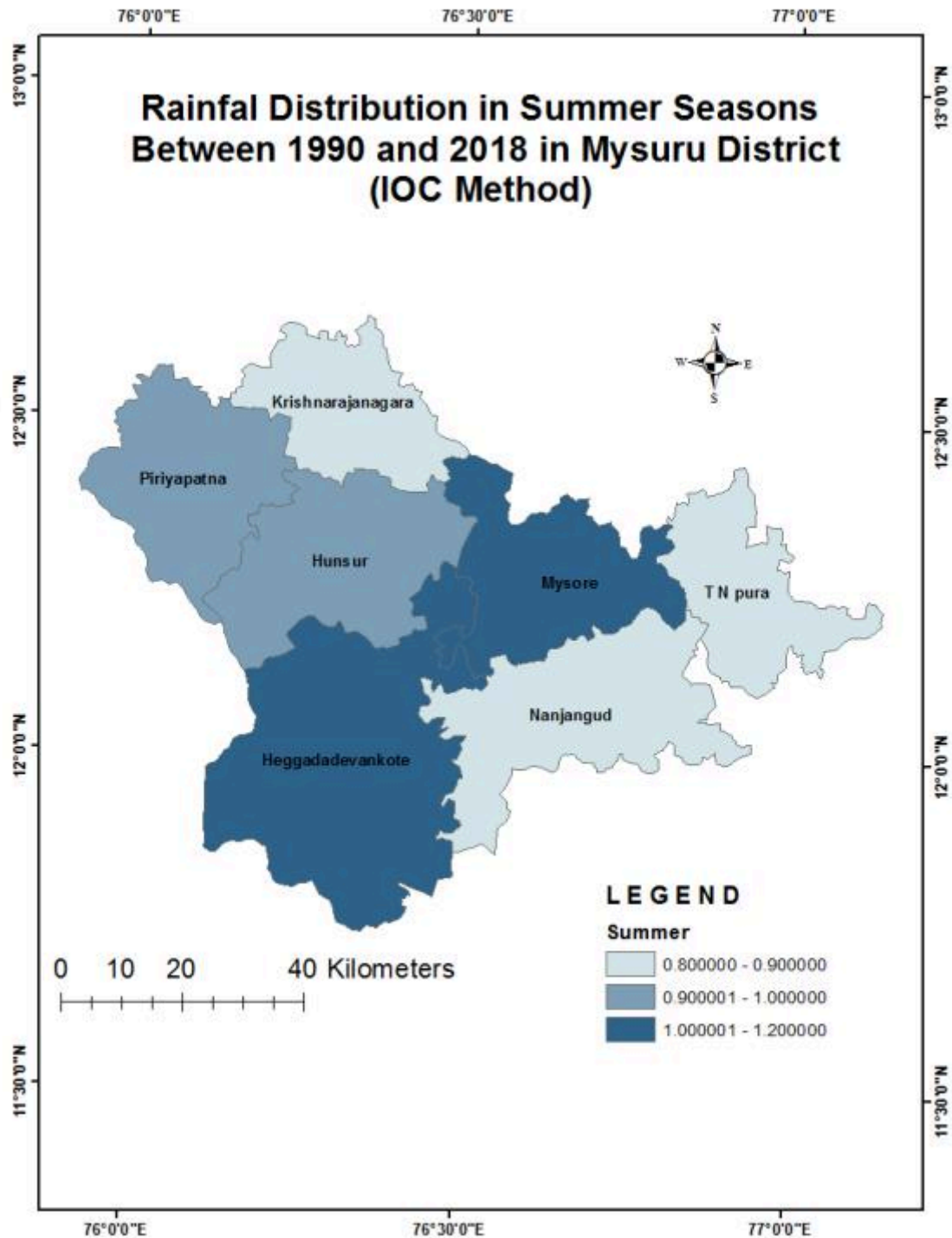
maps and scenes. The project is to determine the Rainfall, Draught monitoring and Climatic variability of 7 Station of Mysore District in Karnataka state in India.

The technology used in the project is QGIS (Quantum Geographic Information System). The software allows users to analyze and edit spatial information, in addition to composing and exporting graphical maps. QGIS supports [raster](#), [vector](#) and mesh layers. Vector data is stored as either point, line, or [polygon](#) features. Multiple formats of raster images are supported, and the software can [georeference](#) images. We also tested in ArcGIS for the visualization of maps.

The area is selected and daily rainfall data is obtained from 1961-2021 and annual rainfall data is collected using Pivot Table in MS Excel. The Standard Precipitation Index (SPI) and Co-efficient of Variability (CV) is calculating using the formulae and tabulated. The Map of the selected area id downloaded into the software and the co-ordinates of all the 7 Stations is added. Then the data of SPI and CV are loaded into QGIS and interpolated using the tool, IDW Interpolate to get the rainfall variation in the map of any required year.

The variation of Rainfall, Draught monitoring and Climatic variability is compared for 30 year interval as any climatic change can be determined for minimum of 30 years. The changes in the rainfall pattern, variability, trends are noted.





## REFERENCE:

The references used for this project are book on 'GIS Solutions for Civil Engineering', Advanced Surveying Textbook- authored by Satheesh Gopi, N Madhu, R Sathikumar, Report by Yogananda S B<sup>1</sup>, Shruthi G K<sup>2</sup>, Thimme Gowda P<sup>3</sup>.