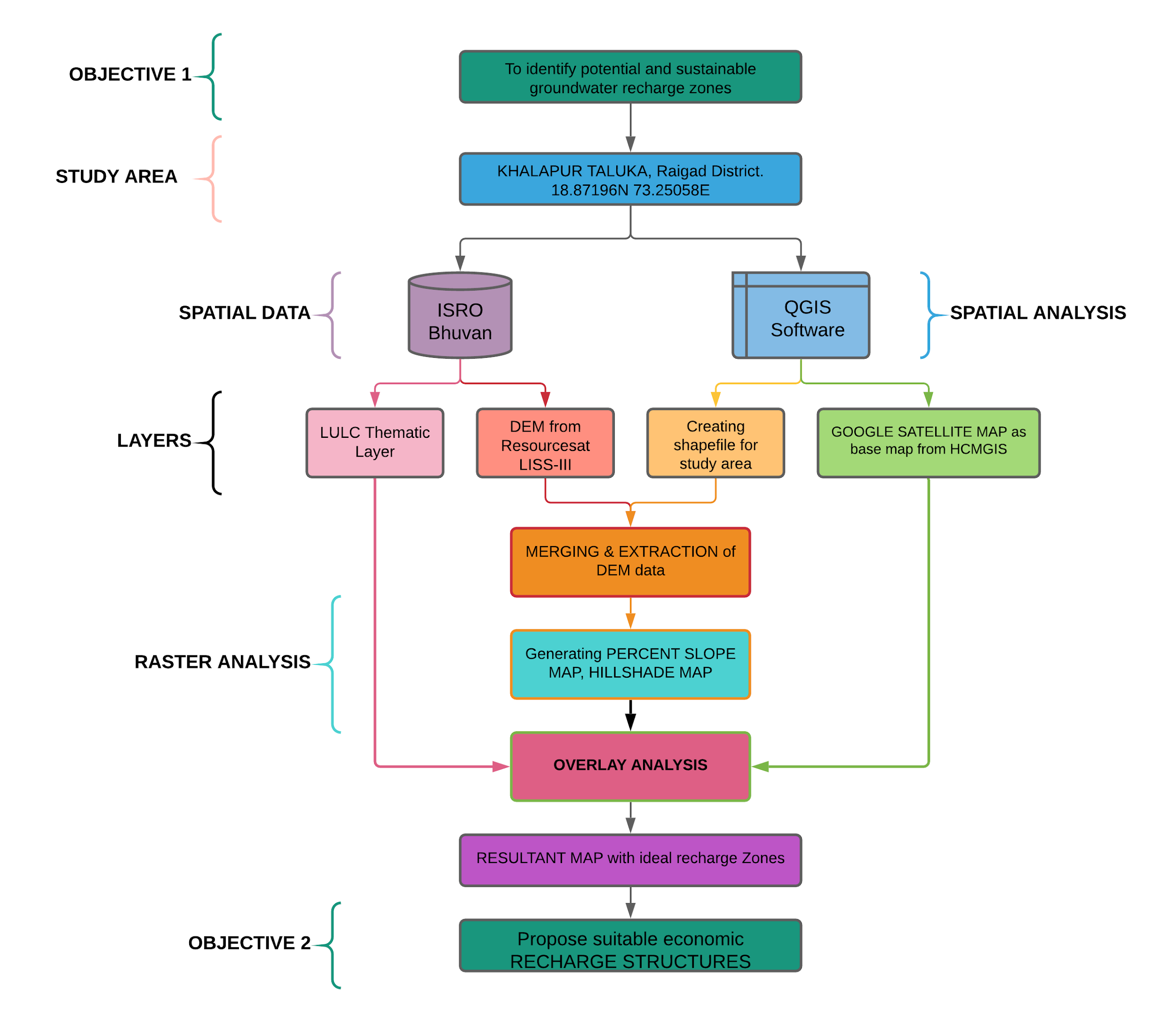
POTENTIAL GROUNDWATER RECHARGE ZONES

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***METHODOLOGY***

**ISRO DATA & GIS STEPS:-**

* QGIS, open source software was used for spatial analysis.
* A base map was generated by HCMGIS plugin (Google satellite map) and the shapefile for study area was created.
* DEM data was downloaded from Resourcesat LISS III Satellite ISRO, bhuvan portal.
* It was merged and extracted for study area and a percent slope map as well as hillshade map was generated.
* A LULC thematic layer was overlayed.
* The rainfall data was collected from IMD.
* All these layers were integrated and a resultant map was generated which showed the potential groundwater recharge zones.

***COMPLEXITIES:-***

**1. Selection of optimum point of recharge:-**

- The geographical topography of the study area is undulating & hilly.

- The possibility of wastage of surplus runoff due to sloping topography is more. The optimum points were selected on the basis of the needs and occupational demands namely population and agro based lifestyles.

**2. Post monsoon drought:-**

- It has been observed that even after records of excess rainfall during monsoon season, various regions face dried up wells, water scarcity and drought like situations post monsoon.

- This is due to unmonitored extraction of ground water, wastage of surplus water, unlimited access to groundwater for public use, etc. Hence an equitable distribution system must be enforced regulating the extraction and misuse of water.

***POTENTIAL APPLICATIONS:-***

1. **To identify points of recharge for ground water table:-**

- Identified points will provide for most economical and sustainable method for maximum potential recharge according to its identified zone.

- To identify these points, overlay analysis of all the raster data collected is done. This data is collected from resourcesat LISS III.

1. **To propose recharge structures to harness surplus runoff:-**

**- Zone 1: soil conservation:-**hilly terrain regions have low scope for natural percolation and erosion due to surface runoff is common. Bunds, creating terraces, etc are a few suggestions to overcome this problem.

- **Zone 2: ground water recharge:-** to harness the surface runoff and to facilitate recharge of ground water table. Percolation tanks, bore wells, artificial ponds, etc are a few structures to curb the delineation of groundwater table.

1. **Development of rural and agricultural sectors:-**

-80% of groundwater is used for drinking and domestic purpose in rural areas and more than 65% is extracted for agricultural demands. Supply to the ever increasing demand of water can be met by aquifer systems.

-Rejuvenation of aquifers is more economical and sustainable method than surface water storage structures.