

**BHUVAN PORTAL PLUGIN FOR  
WATER SUPPLY PIPELINE GRID  
OPTIMISATION**

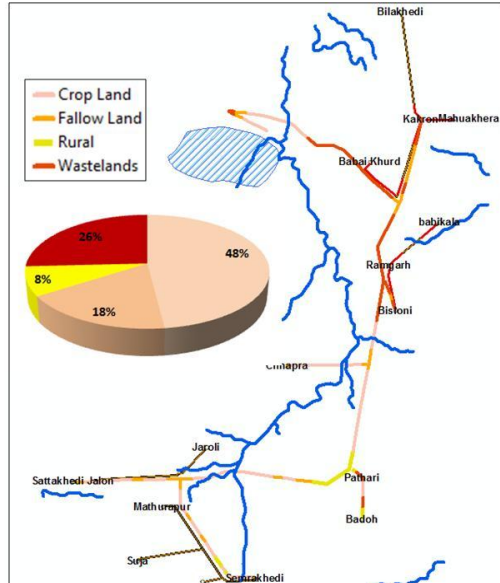
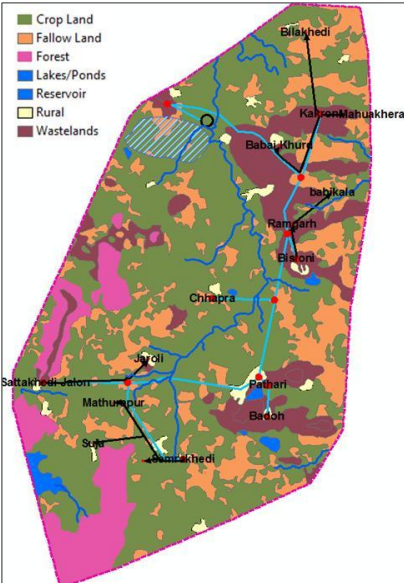
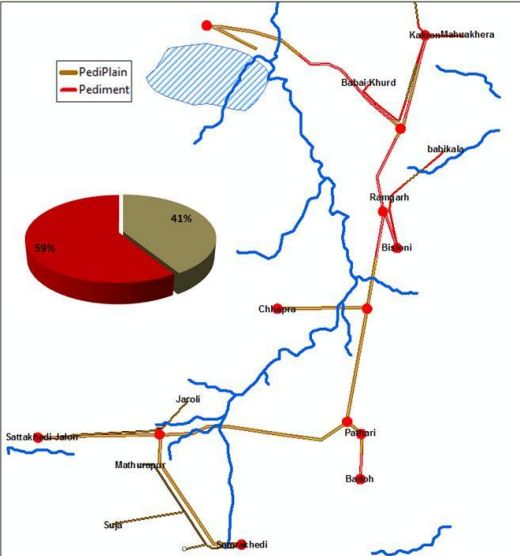
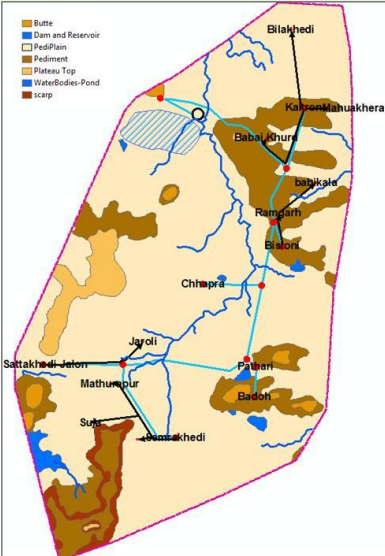
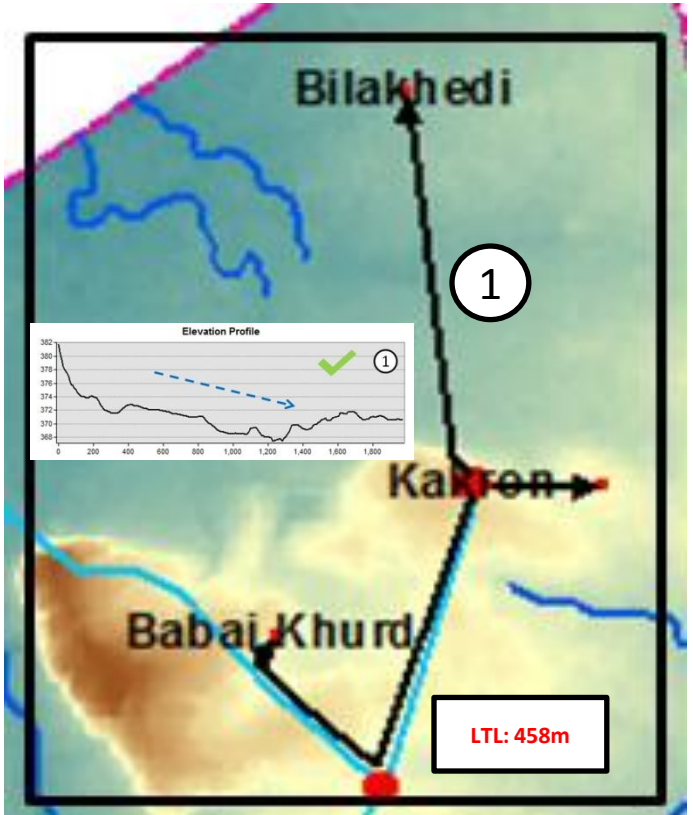
# WATER PIPELINE GRID OPTIMISATION : PILOT STUDY

A multi village water supply scheme planned in and around the Bagoda village in Vidisha District in MP, was optimized using topography, land-use and geomorphology information

The work was carried out in a GIS Interface using elevation profiles and thematic data

For this, the following RS based thematic layers are considered:

1. Topography : From CartoDEM
2. Geomorphology : From NGLM
3. Land Use : From LULC 2<sup>nd</sup> Cycle

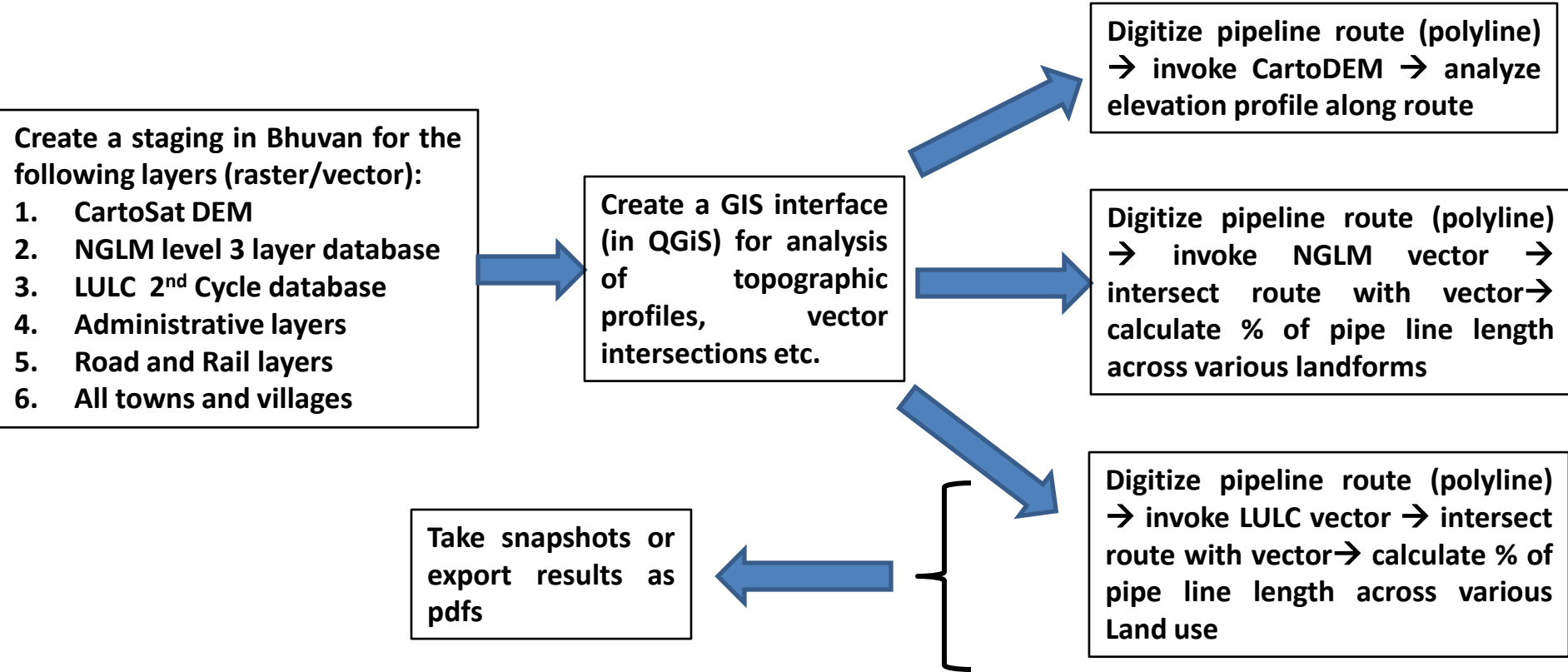


Geomorphologic Assessment

Land-use Assessment

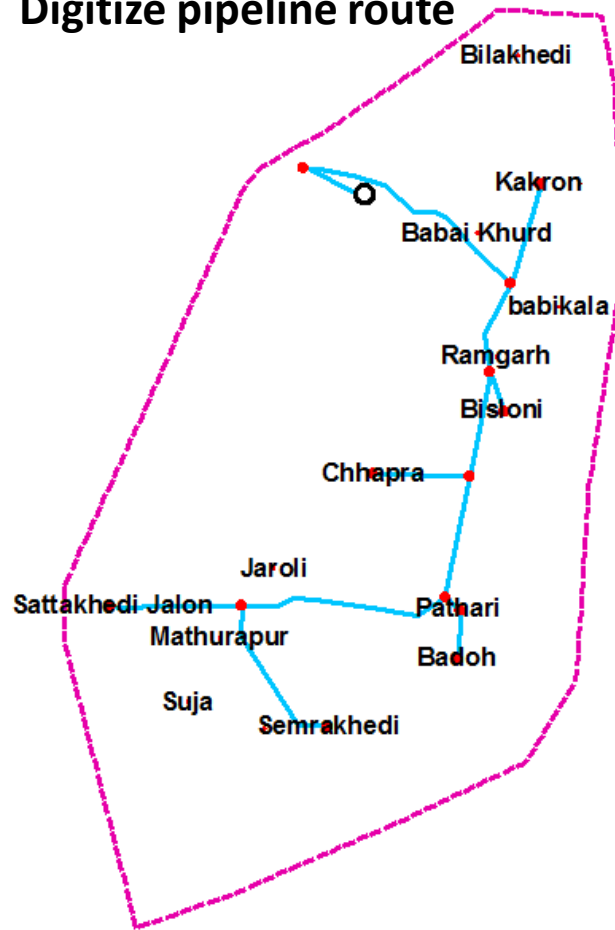
# WATER PIPELINE GRID OPTIMISATION : OUTCOME OF PILOT STUDY

- The pilot study was appreciated by Ministry of Drinking Water in Sanitation
- It was directed to create **sub-portal in BHUVAN** with all the existing database layers so that the entire activity can be carried out in an online interface.
- Training needs to be provided for state and central govt. officials undertaking this activity
- Following is the general flowchart of the optimization procedure:

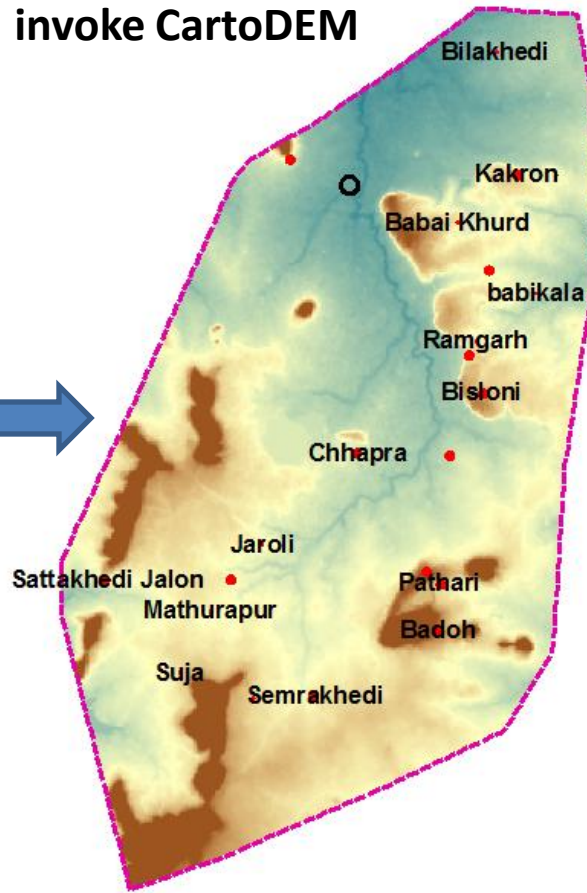


# TOPOGRAPHIC OPTIMISATION : EXAMPLE

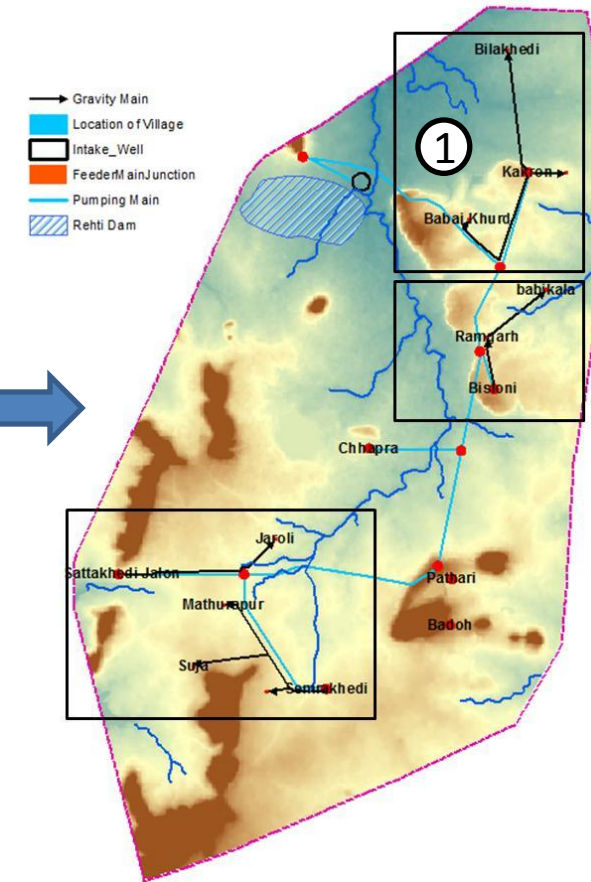
## Digitize pipeline route



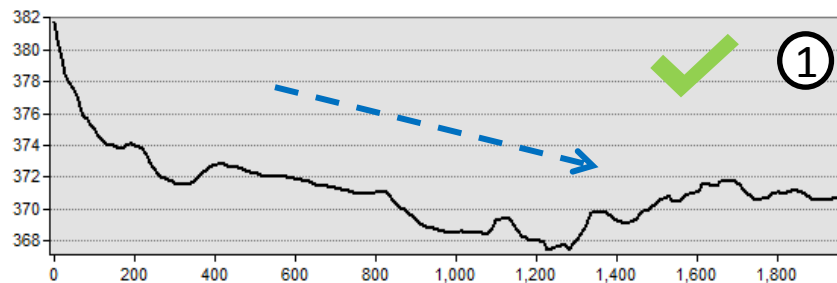
## invoke CartoDEM



## Overlay route on DEM



## Elevation Profile

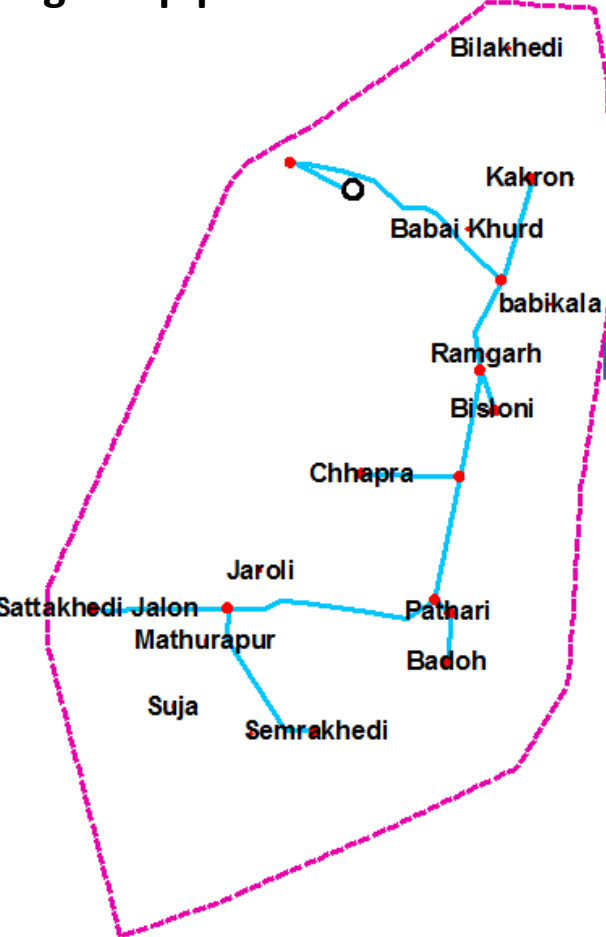


analyze elevation profile along route

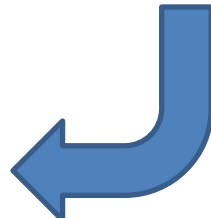
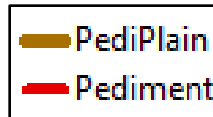
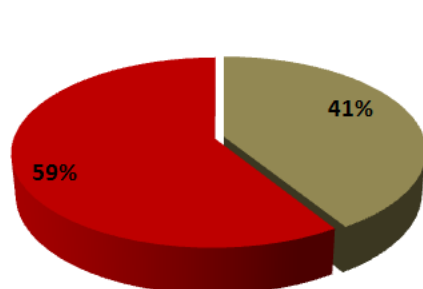
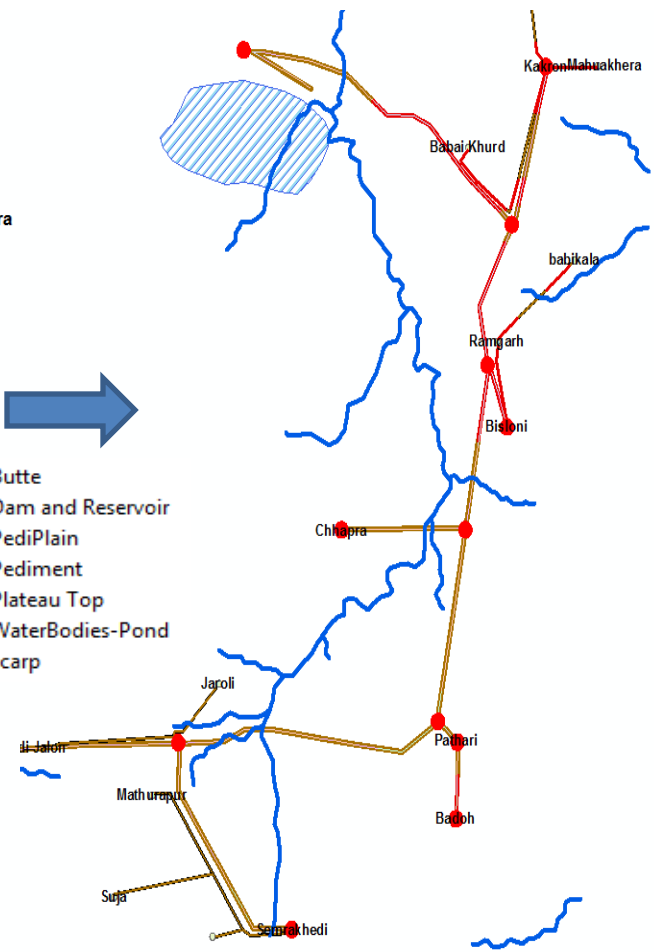
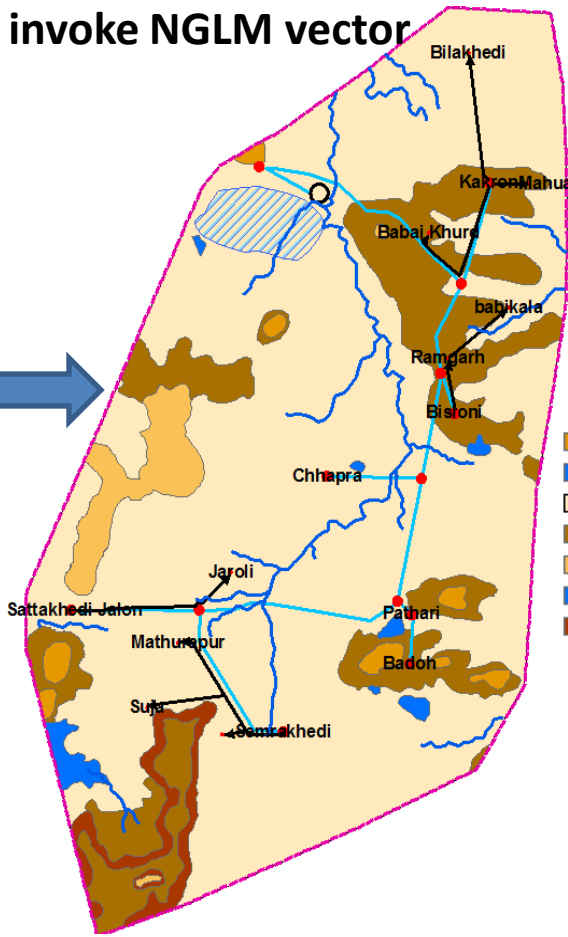
# GEOMORPHOLOGIC OPTIMISATION : EXAMPLE

intersect route with vector

Digitize pipeline route



invoke NGLM vector



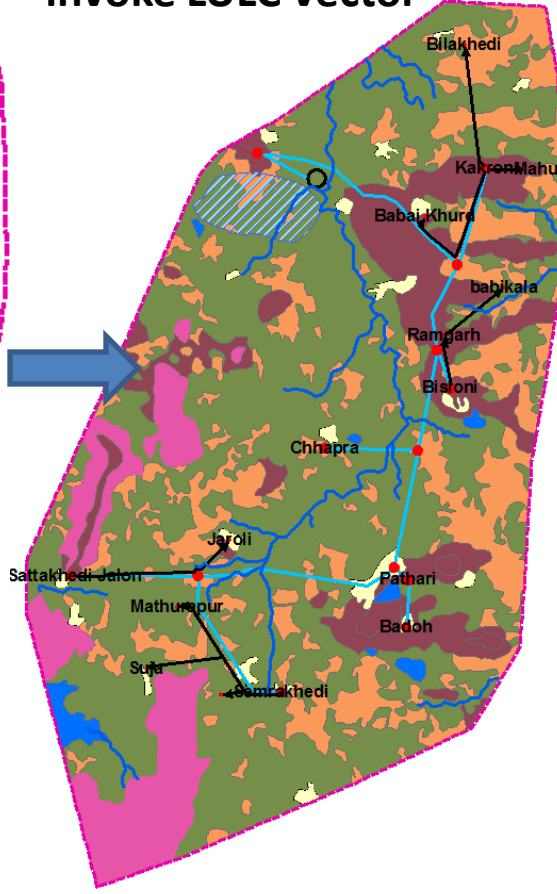
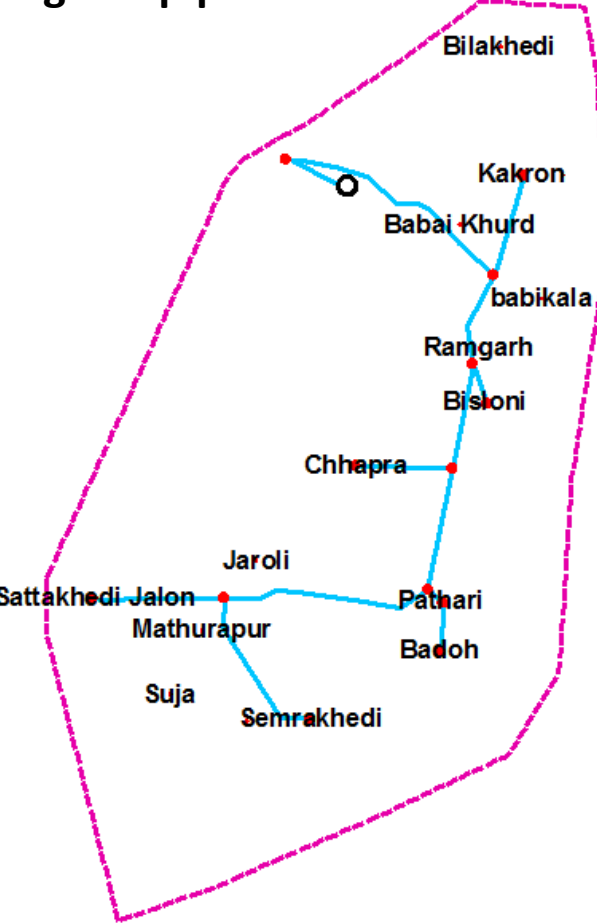
calculate % of pipe line length across various landforms

# LANDUSE OPTIMISATION : EXAMPLE

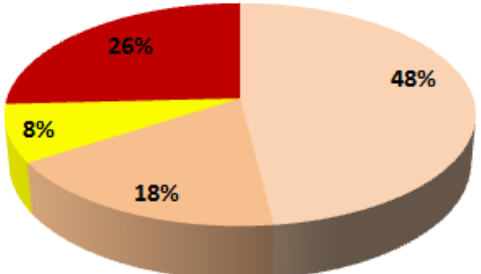
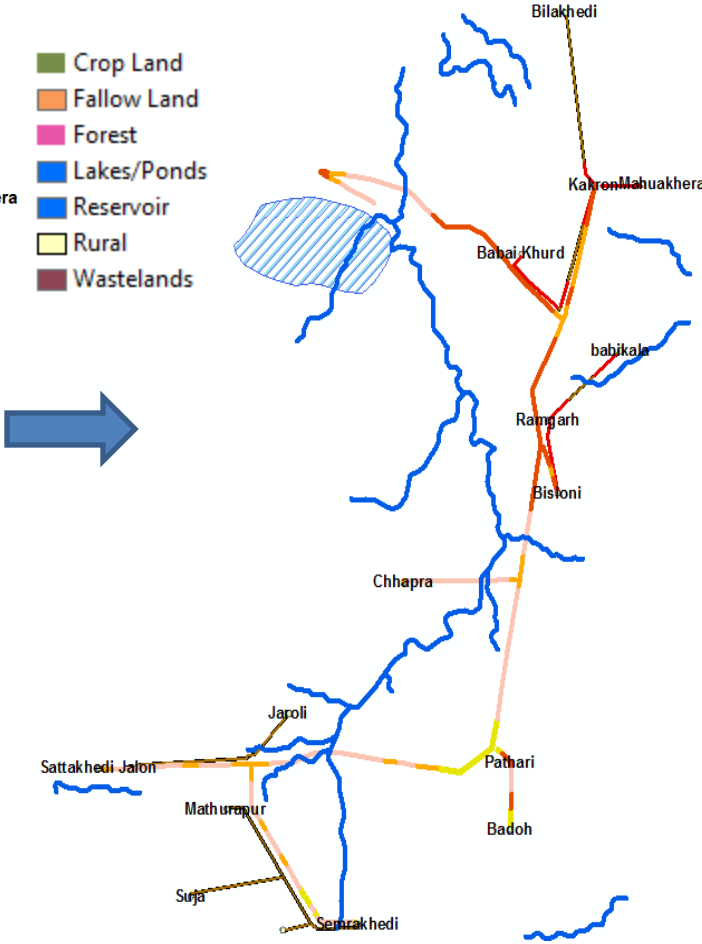
intersect route with LULC vector

Digitize pipeline route

invoke LULC vector



- Crop Land
- Fallow Land
- Forest
- Lakes/Ponds
- Reservoir
- Rural
- Wastelands



- Crop Land
- Fallow Land
- Rural
- Wastelands

calculate % of pipe line length across various Land use