

CHANGE DETECTION BASED ON LISS III DATASETS

- **Methodology**

LISS III dataset has been made use of in the project over AWIFS dataset preferentially because of the higher spatial resolution of 24m which LISS III offers. LULC maps of Pune Haveli Taluka for the year 2008-09 & 2018 have been made along with areal calculations of the LULC feature classes in both the maps. To cover the whole Pune district with LISS III tiles, the Latitude-Longitude of Pune had been used to get correct tiles which were then merged in QGIS and clipped for Pune district using Indian district boundary shape file. Semi-Automatic plugin has been made use of for LULC Supervised classification. A minimum of 30 sample data points were given for each class of LULC. The classification algorithm used was Maximum likelihood algorithm. The areas of the 4 classes namely Urban, Water Bodies, Agricultural land/Vegetation & Barren land in sq.km were 398.12, 312.55, 650.09 & 905.87 respectively in 2008-09. The corresponding areas in sq.km for the year 2018 found were 735.74, 405.08, 658.87 & 564.54 respectively. The above statistics revealed a significant increase of Urban areas by 337.62sq.km & decrease in Barren lands by 341.33 sq.km.

- **Complexity**

Validation of Training dataset wasn't done due to the ongoing pandemic & hence its quality is doubtful. Along with this, the algorithm used was maximum likelihood which resulted in overlap of some urban class with barren class & vice-versa. Due to the multi-temporal availability of the images for 2008 & 2018, tiles had variable visual looks for the whole district separating it into 2 halves for the classification. Improving training dataset sample points helped to an extent.

- **Potential application of the map**

The LULC maps can be used in conjunction to understand the changing landscape of Pune Haveli taluka. These maps may play a significant and prime role in planning, management and monitoring programmes at local level. They provide a better understanding of land utilization aspects and may help in the formation of policies and programme required for development planning. It may help achieve sustainable development for the district in most rational and optimal way. It may help in drafting environmental policies so that the ecosystem of the region is maintained and the region flowers.

