

## Hands-on Remote Sensing & GIS using QGIS for Faculty & Students

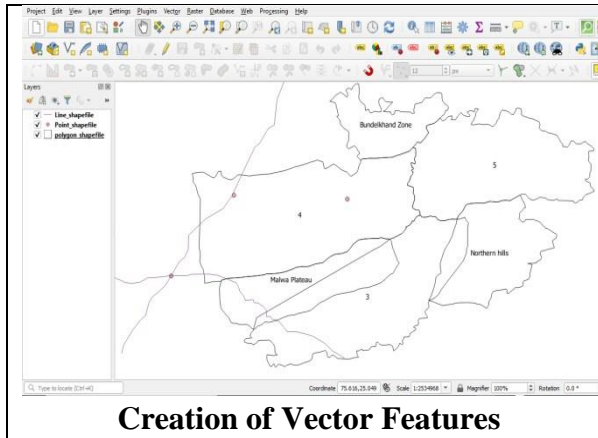
21 days “Hands-on Training on Remote Sensing and GIS Using QGIS” was organized from 9th November to 29th November 2021 for faculty and students. The objective of this training was to introduce the participants to use RS and GIS software. The 21 days training covered the topics:- a) Introduction to Remote Sensing and its applications in Agriculture. b) Satellites, Sensors & Resolution, Visual Interpretation of Satellite Imagery, Different Geoportals. c) Introduction, acquiring, and installation of QGIS software, Georeferencing of map, and generation of vector features. d) Acquiring satellite data, basics of an image, bands information, band combination, FCC formation, and clipping of Area of Interest (AOI) in the QGIS environment. e) Pre-Processing of Landsat-8 using SCP plugin, Creating training dataset, Satellite image classification, LULC area calculation, and map layout creation. The training was attended by 38 participants includes 16 Assistant professors, 4 scientists, 14 students, and 4 technical staff.

### Detailed training schedule

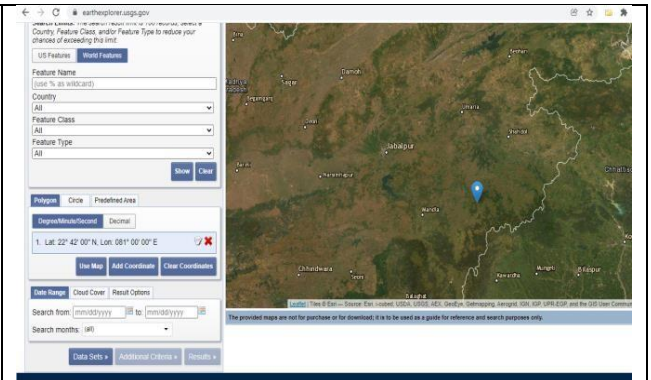
Date	Topic
09/11/2021	Introduction to Remote Sensing and applications in Agriculture, Pre-Training Test, Specialized learning
10/11/2021	Satellites, Sensors, and Resolution, Visual Interpretation of Satellite Imagery Special Lecture
11/11/2021	Different Geoportals (Earth explorer, Bhuvan, Copernicus ESA, etc.). Introduction to GIS.Special Lecture
12/11/2021	Introduction of QGIS open-source software.
	Downloading & Installation of QGIS Software Overview. Practice Session
13/11/2021	Georeferencing of Map, Generation of vector features such as Point, Line, and Polygon. Special lecture
15/11/2021	Features (Point, Line and Polygon) digitization, filling data in the attribute table and area calculation. Practice Session
16/11/2021	Downloading of Landsat-8 satellite dataset and about bands information. Practice Session
17/11/2021	Layer stacking of different bands and clipping of Area of Interest (AOI) Practice Session
18/11/2021	Layer stacking of bands and clipping of Area of Interest (AOI). Practice Session
20/11/2021	Band combinations for agriculture applications using False Colour Composite (FCC). Practice Session
22/11/2021	Pre-Processing of Landsat-8 using SCP. Practice Session
23/11/2021	Region of Interest (ROI) and Creating Training Dataset. Practice Session
24/11/2021	Introduction of Classification, Supervised classification using Minimum distance algorithm. Practice Session
25/11/2021	Supervised classification using Minimum distance algorithm. Practice Session
26/11/2021	Area Calculation of LU/LC classified data. Practice Session
27/11/2021	Map Layout Creation, Special lecture
29/11/2021	Presentation by Participants on LU/LC (as prepared during exercise) Post Training Assessment & Valedictory Function

Gender wise and category wise details of participants is presented below

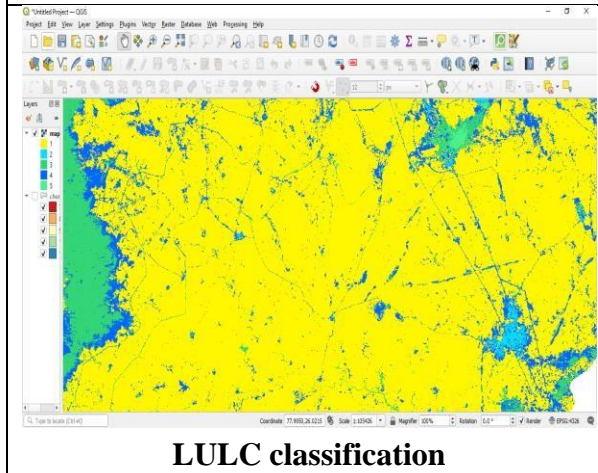
Participants in Hand on Training of Remote Sensing and GIS using QGIS										
Gender	Number of Participants					Percentage of participants				
	SC	ST	OBC	UR	TOTAL	SC	ST	OBC	UR	TOTAL
Male	2	4	12	12	30	7	13	40	40	79
Female	0	0	2	6	8	0	0	25	75	21
Total	2	4	14	18	38	5	11	37	47	100



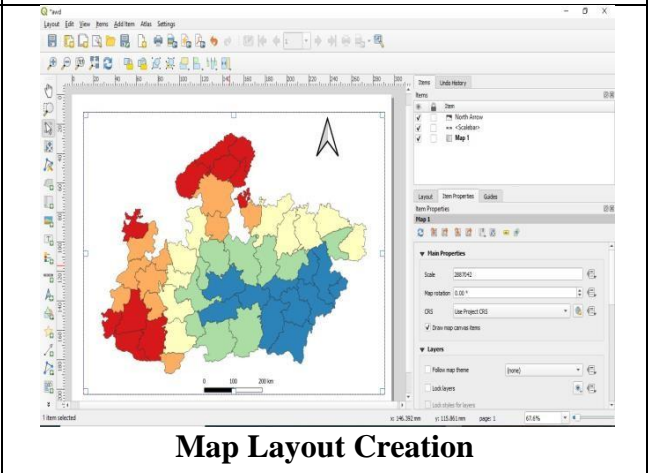
**Creation of Vector Features**



**Downloading of Landsat-8 satellite dataset**



**LULC classification**



**Map Layout Creation**