

CHANGE DETECTION (URBAN SPRAWL)

Methodology

The 2009 (the oldest available) & 2017 (the latest available) satellite imagery of Dispur, the State capital has been collected from Open Data Archive section of Bhuvan, ISRO for the month of November (both the years). The source of the map is IRS P6 LISS III 2009 and 2017. Of the various tiles covering the Dispur district, the one in which location symbol was pinned has been chosen for the study for both years. The map has been classified into six major land-use classes with the help of various training sites as created and Maximum Likelihood Classifier (MLC) was used under Supervised technique in QGIS on 3-2-1 band. Further, conventional symbols were given to different LULC category for different years. Both the maps were overlapped and other feature except built-up were checked off. The symbols were changed for both years to give a better visual to increased built-up. The overlapped change areas were given a base of 2017 satellite imagery.

Complexities:-

The supervised technique is more accurate way to LULC Classification but it turned out to be little difficult to differentiate between different tones and especially texture for example- In case of vegetation, agriculture, plantations, forests etc.

The sandbanks and river deposits were mis-classified as settlement in supervised technique so, the manual correction using polygon digitization has been used for both the years to overcome the demerits of the system generated default.

The Open street map and Google earth were not working to provide a base to overlapped changes, thus 2017 satellite imagery has been used to give a geo look.

Applications/Uses:-

- 1- The change detection map can be used for research purpose, GIS classes showing examples of Urban sprawl etc.
- 2- The urban sprawl map helps in studying the relation between climate change and urbanization (increasing concrete cover)
- 3- The map can be used for planning purpose by regional planners and government officials to give their planning a practical geographic outlook.
- 5- The map can be used by Disaster management teams and relief groups.
- 6- The map can be used by business man and industrialist for setting up of consumer led markets like shopping malls, Restaurants, hospitals etc.