(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/11/2022

(21) Application No.202241062748 A
(43) Publication Date : 11/11/2022

(54) Title of the invention : PREDICTION OF URBANIZATION EXPANSION AND CHANGE ANALYSIS OF LAND USE LAND COVER BY USING OPEN-SOURCE GIS

(51) International classification	:G06Q0050260000, G06N0003040000, G06F0016290000, G06T0017050000, H04N0005225000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
In the past few decades, the Metro region (GVMC) in the Visakhapatnam district has experienced rapid growth in both population and urbanisation. The current invention provides insight into the geospatial methods to analyse LULC changes for the GVMC region in the years 2010, 2015, and 2020. The ability of the Multilayer Perceptron-Artificial Neural Network method (MLP-ANN model) in combination with GIS techniques is discussed in this paper. In order to investigate MLP-ANN and predict the influence of LULC between 2010 and 2015, where there were noticeable effects, spatially varying maps of DEM (Digital Elevation Model) and road distance were used. A good amount of accuracy and kappa values are specified in the LULC of the actual and projected maps for 2020. The MLP-ANN method is employed to forecast potential changes in land use and cover for the years 2030 and 2040. The study highlights the significance of anticipating LULC changes, for which thematic maps assist in defining the region with a clear and methodical approach to sustainable management. Additionally, the results contribute to better policy direction and resource protection.

No. of Pages : 29 No. of Claims : 5