

3-D Digital Modelling using Multi-Spectral Remote Sensing Imagery: A Study of Million+ City, Faridabad, Sub-Region of Central NCR, Haryana State, India

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SUMMARY

The geospatial remote sensing information have a complex structure involving space, time and presentation. The 3-Dimensional digital modelling involves of spatial and non-spatial information integration for geographic visualisation in context to the real world. In other words, the geospatial information visualisation is also known as geovisualisation. So, the multiple interactively linked view providing different perspectives into the data has become a kind of standard in geovisualisation. Urban sprawl has been quantified by considering the built-up area as the key feature of sprawl, which can be obtained either from physical field survey or through remote sensing satellite imagery. A large number of studies are dealing with quantification of the spatial patterns of urban sprawl with the help of Remote Sensing and GIS. In all these studies, however, concluded with different methodologies in quantifying the urban sprawl. But it is found that there is common approach to consider the behaviour of built-up area and population density over the spatial and temporal changes which has taken place in most of the cases of spatial pattern of urban sprawl. So, the urban sprawl is the process of transformation of rural areas into urban areas due to in-migration, industrial growth and transport network infra-structure development. In the recent past, a lot of attention has been paid to understand and analyse the process of spatial patterns of urban sprawl. It is noteworthy to mention that over the periods, there has been continuous process of urban sprawl in the rural-urban fringe of Faridabad City due to the liberalization of economy, development plans and policies of the State Govt. of Haryana and Central Govt. of India. In view of this, the conventional surveying and mapping techniques are expensive and time consuming for the estimation of urban sprawl. Such information is not easily available for most of the urban centres and cities. So, as a result, increasing research interest is being directed to the mapping and monitoring of urban sprawl using geospatial technologies which is best suited for geovisualisation of multi-spectral imagery for spatio-temporal land development as well as for 3-dimensional modelling of the process of urban sprawl. Hence, the present research would make an attempt to help local, regional and state level land use planners and policy makers to better understand and address the issues attributed to urban sprawl in context to the real world scenario.