

Analysis of Enhanced Built-up and Bare Land Index in the Urban Area of Yangon, Myanmar

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Abstract : The availability of free global and historical satellite imagery provides a valuable opportunity for mapping and monitoring the year by year for the built-up area, constantly and effectively. Land distribution guidelines and identification of changes are important in preparing and reviewing changes in the ground overview data. This study utilizes Landsat images for thirty years of information to acquire significant, and land spread data that are extremely valuable for urban arranging. This paper is mainly introducing to focus the basic of extracting built-up area for the city development area from the satellite images of LANDSAT 5,7,8 and Sentinel 2A from USGS in every five years. The purpose analyses the changing of the urban built-up area according to the year by year and to get the accuracy of mapping built-up and bare land areas in studying the trend of urban built-up changes the periods from 1990 to 2020. The GIS tools such as raster calculator and built-up area modelling are using in this study and then calculating the indices, which include enhanced built-up and bareness index (EBBI), Normalized difference Built-up index (NDBI), Urban index (UI), Built-up index (BUI) and Normalized difference bareness index (NDBAI) are used to get the high accuracy urban built-up area. Therefore, this study will point out a variable approach to automatically mapping typical enhanced built-up and bare land changes (EBBI) with simple indices and according to the outputs of indexes. Therefore, the percentage of the outputs of enhanced built-up and bareness index (EBBI) of the sentinel-2A can be realized with 48.4% of accuracy than the other index of Landsat images which are 15.6% in 1990 where there is increasing urban expansion area from 43.6% in 1990 to 92.5% in 2020 on the study area for last thirty years.

Keywords : built-up area, EBBI, NDBI, NDBAI, urban index

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