ABSTRACT

Spatio-Temporal Analysis for LanduseLandcover in Bethlehem District Using Remote Sensing and GIS

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The aim of this project is to make a comprehensive study to find solutions for spatial issues in Bethlehem, such as the situation of natural reserves, the situation of roads, the spatial analysis for schools and facilities locations, the expansion of urban areas.

The data was collected from satellite imagery (Landsat from USGS Earth Explorer, Sentinel from ESA Open Access Hup, and municipalities), facilities locations (schools, dumping sites, and hospitals), as well as Aerial photos. The data of satellite imagery were classified according to Corrine classifications, and then analyzed the current facilities of Bethlehem District. Spatial analysis was conducted to suggest new facility locations, and centerlines of roads were digitized from aerial photos and were analyzed to suggest new roads location.

In the end, the results showed that there was a big growth of urban areas, shrinkage of the natural reserves areas, and an expansion of the Israeli settlements during the years (1987, 2002, 2013, 2015, 2018). The researchers suggest new places for roads and facilities (such as schools, and dumping sites).