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Assessing urban development trends in representative Local Administrative Units before and after the Greek economic crisis.

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This study maps and quantifies urban development in four areas in Northern Greece for the last decade using remote sensing and urban sprawl indices. It aims to correlate the results with the effects of the Greek economic crisis on the construction activity. The remotely sensed data used are two multispectral cloud-free Landsat 5 Thematic Mapper (TM) images (from 2003 and 2009) and one Landsat 8 Operational Land Imager (OLI) image from 2014. A supervised Support Vector Machine (SVM) classifier is applied to produce land cover maps. The maps accuracy is assessed using high resolution airborne and Google Earth imagery for the 2003, 2009 and 2014 images. The high overall built-up area classification accuracy achieved ranges between 85.8% and 87.8%. The derived maps are further assessed to identify and monitor the impervious surface changes. A set of urban sprawl indices is applied to quantitatively analyse the spatial characteristics and spatial imprint of built-up area through time. The analysis of this dynamic phenomenon reveals that the economic crisis not only decreased the number of new constructions but also altered the way new construction occurs.

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