

Analysis of vegetation cover area as an urban environmental quality factor [

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text (article)

Analítica

The process of urbanization modifies and eliminates biological components of urban morphology by replacing vegetation cover with gray surfaces. In this study, we aimed to identify the changes in vegetation cover in the city of San Juan de Pasto between the periphery and commune 1, which has the lowest vegetation cover in the city. We performed a multi-temporal analysis with LANDSAT satellite images over a period of 27 years (1989-2016) using the soil-adjusted vegetation index (SAVI) to determine the loss of urban vegetation cover (UVC). We estimated the urban environmental quality index (UEQI) based on the methodology proposed by the Ministry of Environment and Sustainable Development of Colombia (MinAmbiente), obtaining a score of 42 points that indicates low environmental quality. Furthermore, we calculated a new UEQI by mathematically extrapolating and correlating the theoretical benefits of UVC with environmental quality indicators, such as air quality, urban population exposure to noise exceeding the permitted levels, and residential energy consumption per capita. We found an improvement in the score of all the indicators and, consequently, the UEQI. We obtained a high projected environmental quality score of 60, demonstrating that UVC is a transforming factor of urban environmental quality due to the benefits provided by vegetation cover

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