

O 5. THE SPATIOTEMPORAL IMPLICATIONS OF URBANIZATION FOR URBAN HEAT ISLANDS (UHI) IN TIRANA UNDER THREATENING EXTREME SUMMER TEMPERATURES

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ABSTRACT: The rapid urbanization of the last three decades in Tirana (capital city of Albania) has adverse environmental effects, such as rising surface temperatures. This article analyzes the relationship between the urban heat island (UHI) intensity and Tirana city's land cover characteristics facing serious changes with reduction of green areas. This analysis is based on the temperature data (air and land surface) covering period of 10th to 31st July 2023. The heat islands are clearly defined and there is visible relationship among air and land surface temperature along with green area presence vs. absence. The survey has been based on build up areas (three sample locations), green area, and forest and water bodies. While temperature difference among green/forest/water area and asphalt covered one was 1.5-2.7°C, the difference among air and land temperature in asphalt covered zones was in between 2-3.8°C. For understanding the linkage of the average temperature and built-up percentage, a correlation coefficient analysis was undertaken on each sample area. Following data analyses, we found out that the average temperature and the built-up percentage has a moderate correlation of $R^2 = 0.54$. The increase and differences in the land surface temperature caused by the land cover change is a strict argument that the site is becoming quickly urbanized. In addition to similar approaches further studies should be oriented into the public health issues linked with rapid urbanization.

Keywords: Extreme Weather, Land Surface Temperature, Urban Heat Island, Land Use Cover Change, Urban Planning, Ecological Features.