

**Urban Energy and Spatial Dynamics
 towards Climate Resilience: A Case
 of Bangalore**

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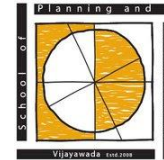
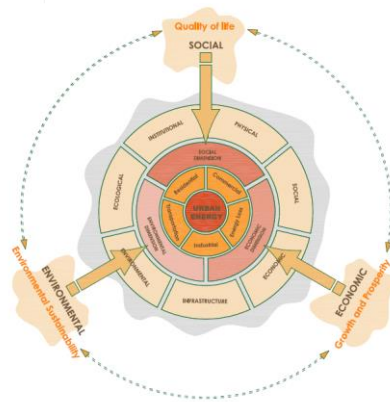
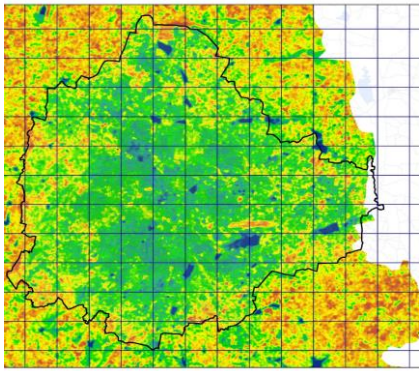


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Introduction

Apart from the menace by industrial emissions, a substantial share of GHG emissions is from the rising energy consumption patterns in cities. As per the IEA's Global have its primary energy demand increase to 4% in 2018, which is 11% of global demand growth. This study attempts to find relation between urban built up, urban green, urban blue and the formation of urban heat stress zones in relation to energy consumption patterns.

Objective

- To explore various dimensions of urban energy consumption and its adverse impact on climate
- To establish the causal linkages between changing urban morphology and energy consumption pattern

Case Status

Data has been collected on GIS format for grids of 2 X 2 km for entire Bangalore region for certain control parameters of resilience to heat stress, i.e.,:

- (i). Population Density
- (ii). Vegetation Index/Green Cover,
- (iii) Water Index/ Blue cover,
- (iv). Built Index/Building Density,
- (v). Land Surface Temperature
- (vi) Road Network Density,
- (vii).Urban Morphology
- (viii). Paved to unpaved ratio,
- (ix) Wind characteristics (Meteorological data)

Preliminary Findings

- Heat stress zones are observed to be having proximity relation to high built density with non-residential function compared residential function
- Water and green index are having a positive degree of influence over the spread of the heat stress zones
- Energy consumption patterns of built form and the location of heat zones are being presently analysed

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