

Urban Heat Island Impact on Human Health Of Dhaka Megacity, Bangladesh

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Abstract

Dhaka has witnessed a rise in temperature of almost 3 degrees Celsius in the last 20 years, while the world is fighting to contain the increase in global temperature to under 1.5 degrees. As urban areas grow, landscape is transformed. Land conversions to residential, road networks, and infrastructure replace open spaces and vegetation. Permeable and moist surfaces become impermeable and dry. Roofs covered with vegetation take benefits of the additional thermal insulation provided by soil and the evapotranspiration. The study is to find the effect of UHI on Human Health and its mitigation.

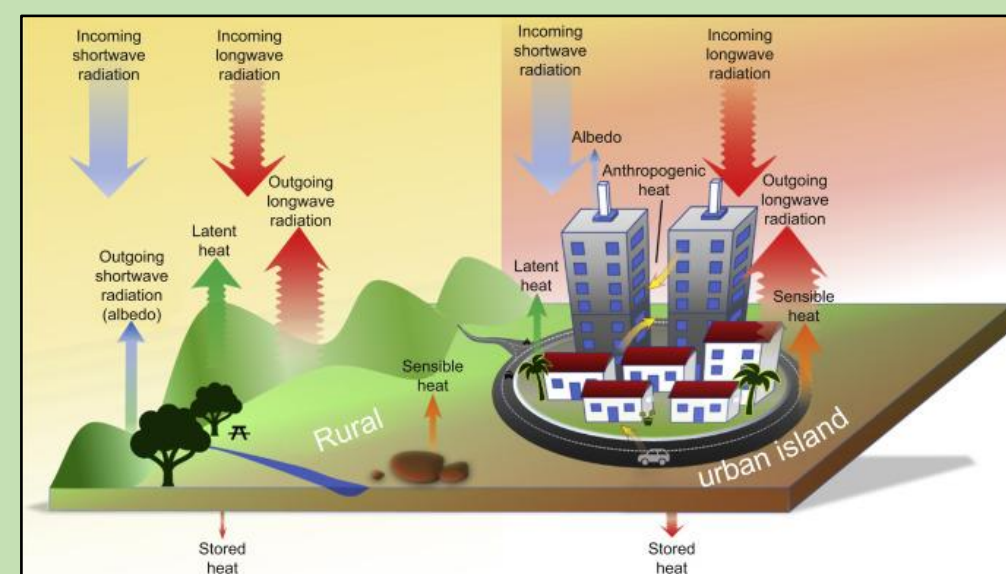
Purpose and Aim:

- 1.To meet up the SDG of Bangladesh
- 2.Examine the relationship between diseases, death and the UHI.
- 3.Develop a well connected and sustainable city by planning with Green infrastructure.

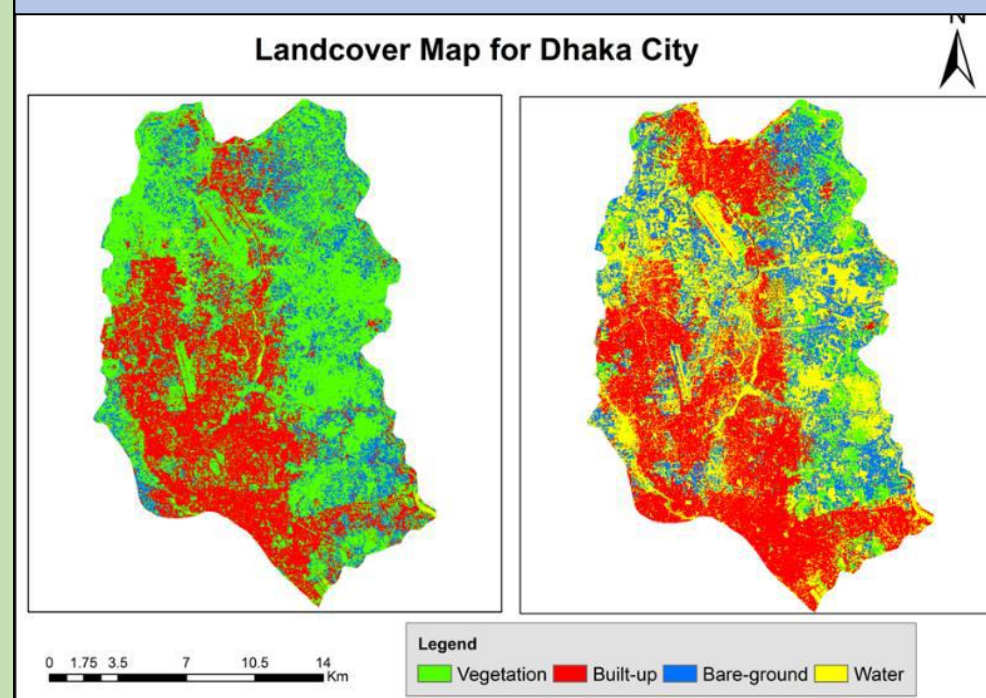
Methodology:

Using 30 years' worth of secondary weather datasets from the Bangladesh Meteorological Department and satellite data of USGS. Primary datasets will be collected for health issues. ArcGIS and the Remote Sensing software will be applied to analyze the data.

Urban residents are deprived from cool relief at night-time like cool relief in the rural areas because UHI's night-time effect are harmful for the time of heat wave



<https://www.sciencedirect.com/science/article/pii/B9780128128435000198>



2002 and 2014 scenario of Landcover changes in Dhaka (5)

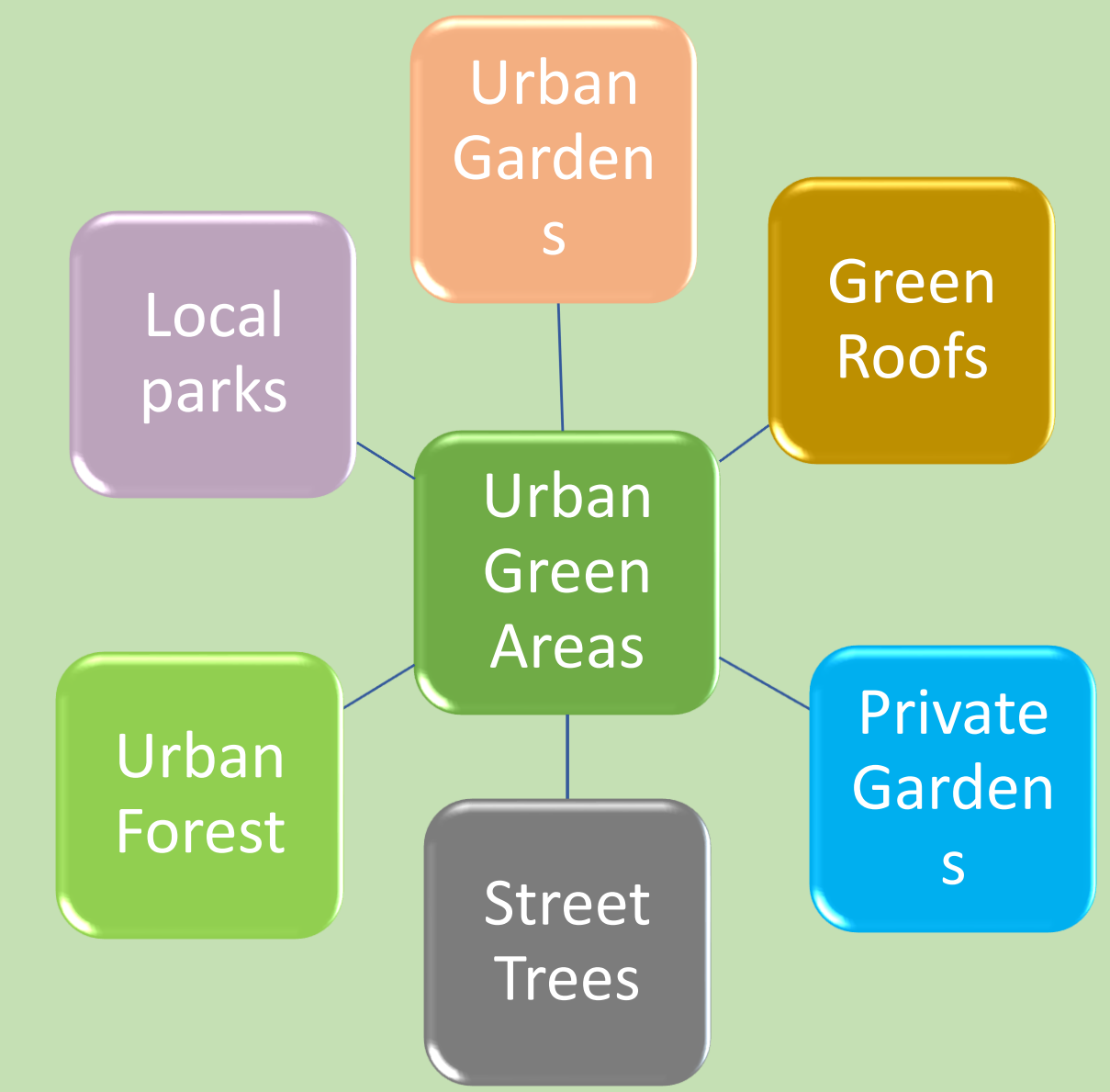
An Urban Heat Island (UHI) occurs when a city experiences much warmer temperatures than nearby rural areas



The UHI phenomenon was first recognized in London in the early 19th Century and since then there have been suggestions to the UHI effect contributing to climate change (3,4). Poor air quality aggravates asthma effects and causes other respiratory related diseases. Asthma patient rate, as noted by, increased in Dhaka city during summertime, particularly in the poor communities who cannot afford air conditioning or any other cooling system to tackle heat wave (1,2).

Mitigation idea:

Build green infrastructure and green roofs—Green roofs are an ideal heat island reduction strategy, providing both direct and ambient cooling effects. In addition, green roofs improve air quality by reducing the heat island effect and absorbing pollutants (7).



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