ECOSTRATEGIST-CASE STUDY

Heat Islands and their impacts on Gig Workers' Wellbeing and Livelihoods

Introduction: Urban heat island (UHI), is a phenomenon in which urban areas experience significantly higher temperatures compared to their surrounding rural or natural environments. This temperature difference is primarily caused by human activities and the built environment. Heat islands have become a common feature of urban areas worldwide and can have various impacts on the local climate, environment, and public health.

Some key factors that contribute to the formation of heat islands in urban spaces are:

Urban infrastructure: Buildings, roads, and concrete structures in cities absorb and retain heat during the day. This leads to an increase in surface temperatures, especially in areas with high building densities and little vegetation.

Reduced green spaces: Urban areas often have limited green spaces, parks, and trees. These vegetation-rich areas help to cool the surroundings through evapotranspiration, but in heat islands, this cooling effect is diminished.

Waste heat: Activities such as industrial processes, air conditioning, and vehicular traffic produce waste heat that further contributes to the warming of urban environments.

Albedo effect: Urban surfaces, such as asphalt and concrete, have lower albedo (reflectivity) compared to natural surfaces like grass and forests. This means they absorb more sunlight and convert it into heat, elevating local temperatures.

Human activity: The concentration of human activity in cities generates additional heat through energy consumption, such as electricity and transportation.

The impacts of heat islands are increasingly becoming evident. Energy consumption has increased as higher temperatures lead to greater demand for cooling, resulting in increased energy consumption and strain on power grids during hot weather. Adverse effects on human health are a real threat as temperatures keep rising year on year.

Elevated temperatures can disrupt ecosystems, affect wildlife, and alter the growing patterns of plants and trees. Heat islands can visibly worsen air pollution levels, as higher temperatures promote the formation of ground-level ozone and other pollutants.

The population of the workforce who are required to remain outdoors and are exposed to the elements are beginning to feel the above impacts more than others. Heat islands can exacerbate heat-related illnesses, such as heatstroke, dehydration, and respiratory problems, particularly among vulnerable populations, including that of gig workers.

How must this be addressed?

Addressing heat islands is crucial for maintaining urban liveability, improving public health, and mitigating the effects of climate change on densely populated areas. By implementing appropriate strategies, cities can effectively counteract the impacts of heat islands and create more sustainable urban environments.

Suggest solutions for a typical ward in Bangalore keeping the following in mind:

- In a dense city like Bangalore, how can transit shelters be built within the existing built environment? What kind of design approaches will be appropriate i.e., what alternative materials, architecture etc will make such shelters durable, easy to use as well as low on env footprint?
- What services / amenities should a typical shelter have? Suggest 2-3 partnership and governance models where the relevant govt body (e.g., BBMP) and the primary business agent (BMRCL, Zomato etc) collaborate to make this happen.
- Using stated assumptions – e.g., number of construction workers in a typical BMRCL site, number of gig workers in the city, number of hours they spend outside. What kind of funding approaches are needed to make this work at scale i.e., who should bear primary responsibility?
- How does one tap into expert networks – architects, construction & real estate etc to crowdsource expertise etc?

Prepare a 5-slider deck mindful of the above points, excluding the introduction and the thank you slide, and submit the same on the unstop portal.

Deadline: 5th August 11:59 pm

Link: https://unstop.com/competitions/ecostrategist-eximius-2023-iim-bangalores-entrepreneurship-summit-iim-bangalore-701206