

How climate change/global warming has caused extreme heat in urban areas

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Urban areas are meant to provide sustainable living, making life from all aspects more comfortable for all. In fact, the keyword here is "for all," being inclusive and not leaving anyone behind. Isn't that the definition of Sustainable Development that states, "A development that meets the needs of the present without compromising the ability of future generations to meet their own needs"?

Let's divide this definition into two parts: one to be the "present generation" and the second to be the "future generation".

If we refer to any reports from internationally recognized organizations, we note that there are serious challenges related to the environment and climate change, which is the main focus of COP28 hosted by the United Arab Emirates last year (2023).

Well, the reality is that we as humans, thinking that we are developing for a more comfortable life, are, in fact, exposing ourselves to environmental pollution that is resulting from our development, which goes against the objectives of "sustainable development" and the 17 goals that the United Nations set.

Extreme heat in urban areas, otherwise known as "Heat Island" or "Urban Heat Island," mainly results from the pollution from Human activities and that of natural sources.

The migration of the population from rural areas to urban areas requires mass construction of buildings, industries, educational and medical services, and other infrastructures such as road networks, potable water supply such as desalination, and environmental solid and liquid waste services and infrastructures.

Each of the above, if not carefully and smartly planned and integrated into a comprehensive Urban Master Plan, may pose a risk to the environment and public health.

Construction of buildings and towers, if not designed in such a way to reduce the amount of power supply used for air conditioning, which is a significant source of heat emissions during the hot, burning summer seasons, and if not integrated with the usability of environmentally friendly and recycled building materials, then the construction carbon footprint will significantly contribute to Climate Change. Building materials, such as concrete and asphalt, have high thermal mass, so they can store and radiate heat for extended periods. This results in higher daytime and elevated nighttime temperatures.

Where industrial zones are encroached into residential areas, the impacts of emissions from industries, transport systems, and storage of raw materials and, in some cases, Dangerous Goods and the generation of hazardous wastes jeopardize the well-being of people in the vicinity.

The increase in population results in increased demand for transport services and, accordingly, more vehicles on the road. Vehicle emissions contribute significantly to Heat Island and negatively to ambient air quality.

Remember during the COVID-19 pandemic when the world became idle, so the air quality in many countries improved? That was a message that we now fail to acknowledge. A message that human lifestyle is polluting the environment, an environment that we demand to be clean for the sake of our own and future generations' wellbeing!

The increase in population in urban areas demands an increase in production, which means an increase in industrial activities and, as a result, an increase in emissions and waste generation, including hazardous wastes. The Clean City index should be a matrix of air quality, exposure to any sort of soil, air, or water pollution, water quality, quantifying and qualifying the waste generation, and the initiatives in place to minimize, segregate, and recycle, and continuous minimization of land filling which is a significant source of emissions of Green House Gases into the ambient air. Collecting and transporting waste from the community is one thing, and sustainable waste management is another. Here's the best definition of waste that I urge you to remember: "A waste is anything that does not have any economic value". Once you understand and integrate this definition into your lifestyle and your work environment, you are going in the right direction in implementing and achieving a circular economy, where waste is to remain within the economy and away from the environment.

Now, if we cannot address the environmental challenges, in some cases, environmental crises and disasters that the current generation faces, how can we be sure the development for future generations will be sustained (part two of the Sustainable Development definition)?

First, any projects and initiations we plan to execute must be beneficial to all with no exclusions. You can't have a small community exposed to pollution or emissions by justifying that you have the majority of the population away from those sources of pollution. Globally, one of the public's everyday exposures to emissions originates from domestic waste and waste water infrastructures. These projects are meant to be environmental projects to protect the environment and public health from pollution and not expose them to primary or secondary pollution – a significant risk to public health and wellbeing.

Remember that not every big project is a good or smart project. You can't justify the effectiveness of your project by its volume or magnitude.

An intelligent way to ensure urban areas are sustainably developed is to ensure qualified Sustainable Development Leaders are assigned to such responsibilities. Smart cities require smart people to make smart decisions for the execution and operation of smart projects.

Here, I present to you five main criteria for nominating a person for Sustainable Development Leadership:

1. Academic qualification related to the responsibility.
2. Field experience of at least 10 years related to the leadership tasks the person will be nominated for.
3. Personal, tangible achievements with positive results.
4. Successful demonstration and training in leadership skills.
5. Loyalty.

It will be then; that we can ensure a development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Otherwise, we will keep struggling and failing to provide well-being for the current generation. That would be a successful failure.