Standing Up To The Environmental Challenge Through Efficient Urban Planning

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by Prabhakar Kumar

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Climate change is no more a debatable topic. The effects of global warming and climate change are clearly visible around the world. Reports suggest that India will be one of the most severely impacted countries by climate change. The extreme heatwave in the north, excessive & untimely rains in the south, frequent incidents of cloud burst in hilly states, and disturbed patterns of monsoon are some of the immediate effects of climate change visible in the country.

The latest report by International Food Policy Research Institute suggests that 9 crore Indians are at risk of starvation by 2030 due to the impact of climate change. This is a scary prediction and even if 50% of this turns into a reality, the consequences will be catastrophic. 2030 is not a very distant year and the situation calls for immediate action from all the quarters.

In the past few decades, Indian economy has been on a progressive growth path. This has led to a rise in the income level of citizens and rapid urbanization. In the recent few years, the growth of the economy and urbanization have accelerated further. Rapid unplanned urbanization has put extreme pressure on natural resources and drastically reduced the green cover.

Rise in the dispensable income has led to the increased demand for many products exerting additional pressure on environment. Additionally, traffic in the country has gone up multifold. The vehicle ownership per thousand people in India which was around 50 in 2001, stood at 225 in 2019 as per Ministry of Road Transport & Highways.

While economic growth and urbanization cannot and should not be stopped, their impact on the environment can also not be ignored. Efficient urban planning can be one of the most efficient means of combatting the impact of climate change. Urban planning doesn't need any drastic changes but subtle adjustments to help conserve and rejuvenate the environment.

Having provisions for Public Transport

Public transport plays an important role in reducing vehicular emissions pollution. One efficient public transport system can replace 100s of private vehicles from the roads. In India, especially in smaller towns, developers convert agricultural land into residential lands. They divide these lands into smaller residential plots and to maximize their profits, they leave bare minimum space between two plots. Gradually, these areas grow into vast congested residential colonies.

By the time government starts recognizing these areas as fully developed urban areas, there is not enough space to create public transport. In such places, people have no choice but to use private vehicles. Urban planners must keep a close eye on any such developments happening and must compel private developers to have provisions for public transport in the localities they develop. The government should enact strict laws to ensure this. For making public transport successful, it is very much necessary to provide classified last mile connectivity.

Blue and Green Infrastructure

Water scarcity is one of the most burning issues currently faced by the country. While various climatic and geographic factors are responsible for the water crisis, humans also have contributed significantly. Unplanned urban development has let most of urban areas turn into concrete jungles. The per capita green cover in some of the major cities is as less as 0.5 sq m/inhabitants. This is one of the reasons why some of the Indian cities are among the hottest in the world.

WHO recommends 50 sq m/inhabitant of green area as the ideal. Urban areas must have provisions for green infrastructure like parks, managed plantations, and open spaces. The role of plants and trees in fighting pollution and CO2 emissions is well known to everyone. Transpiration done by the plants also helps bring down the temperatures. Green infrastructure also provides porous soil for the rainwater to percolate underground and replenish the groundwater levels. Plants also reduce the impact of falling rain drops on soil and aid in soil conservation.

Similarly, blue infrastructure can also play important role in storing the storm water for the period of scarcity and recharging the ground water. Bigger underground water resource helps reduce the need for potable water in the city. Water supply infrastructure consumes huge amounts of energy and puts serious pressure on natural water resources.

Besides the environmental benefits, blue and green infrastructure also add to the aesthetic value of the cities and provide relief to the citizens from the problems of urban life. While proper planning, integrated green and blue infrastructure mapping should be done along with watershed and water harvesting concept.

Alternative Energy

Having provisions to harness the alternative energy sources within the city limits could be a game changer for environmental conservation. While with currently available technologies, it is almost impossible to imagine an entire city being powered by renewable energy; even if a small percentage of the total power can be derived from alternate sources, it will make a huge difference.

By using technologies like GIS, GPS, and remote sensing, urban planners can predict the best areas for installing solar photovoltaic panels, wind turbines, and other devices to utilize the power of nature. In India, there are many states where around 7-8 months high intensity sunlight is available, which can be treated as resource and utilize it for alternative energy source.

Water Treatment and Recycling

Millions of liters of waste water are generated in cities every day. In most cities, there are provisions for water treatment in form of STPs. However, most of these plants get overwhelmed with large amounts of water flowing in and the majority of water flows out of them untreated.

Historically, the country's experience with centralized STPs has not been great. City plans must include decentralized water treatment plants in different parts of the cities. After the initial treatment from these plants, the water can further be recycled for domestic and industrial use. This water can also be stored in the blue infrastructure for dry seasons. Reusing the water is one of the most effective ways of combating the effects of climate change.

Climate change is not something that will affect our lives in the future, it is happening now. Government, Corporate as well as the Citizens must join hands to counter the effects of environmental degradation. Government of India is in the process of developing 100+ smart cities across the country.

Besides other things, environmental conservation must remain the central mission of these cities. Citizens should also insist that the land developers focus on sustainability while developing any new area. The role of the corporate is also important as capital is going to be an important weapon in the war against climate change.