

THE BLUES OF VANISHING GREENS

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This recent picture of Ulsoor Lake shows thousands of dead fish as a result of low levels of dissolved oxygen in the water

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Bengaluru's innovation and growth may have made it a force to reckon with in recent years, but the price the city has paid in the process now threatens to destroy it. Its vanishing trees, water bodies and mounting waste are slowly making the city unlivable

In the last four decades, the Garden City has transformed so dramatically that most dyed-in-the-wool Bengalureans can barely recognise it. While the economic growth has definitely come as a positive development, the city has paid a heavy price for it, and continues to.

Take these statistics, for instance: in the last 40 years, Bengaluru has seen a 625 per cent increase in its built-up area, 78 per cent decline in vegetation, and 79 per cent decline in water bodies, according to an analysis done by the Centre for Ecological Studies at the Indian Institute of Science.

The rapid urbanisation has taken a massive toll on the city's environment and as a result, its urban sustainability index paints a bleak picture. A study taken up by IISc professor Balachandra Patil shows that the city loses out on account of a lack of urban green spaces and water pollution, among other factors.

The environmental sustainability index looks at global climate change, air/soil/water pollution, urban green spaces, land use pattern, and the consumption of water, energy, and raw materials.

"Bengaluru has seen intense urbanisation with 125 per cent increase in built-up area between 2010 and 2014, with decrease of vegetation cover by 62 per cent and water bodies by 85 per cent," said Bharath H Aithal, a researcher at IISc.

The rapid development, especially along the periphery, has many potentially detrimental effects, including the loss of valuable agricultural and eco-sensitive (wetlands and forests) lands, enhanced energy consumption and greenhouse gas emissions from increasing private vehicle use.

"Vegetation has decreased by 32 per cent (from 1973 to 1992), 38 per cent (1992 to 2002) and 63 per cent (2002 to 2010). These figures show that the city is gradually transforming into a concrete jungle, with compact urban areas and retreat of vegetation and water bodies," said Aithal.

BALDING BLUES

The researcher pointed out that up to 54 per cent of all lakes were encroached upon for illegal buildings. A field survey of all lakes shows that nearly 66 per cent are sewage-fed, 14 per cent are surrounded by slums and 72 per cent show loss of catchment area.

In addition, he said, lake catchments were used as dumping yards for either municipal solid waste or building debris.

"The surroundings of these lakes have illegal constructions and most of the time, slum-dwellers occupy adjoining areas. Often the water is used for washing and household activities and even fishing was observed at one of these sites," said Aithal.

"Along with the disappearing green cover, rapid and unplanned development has also resulted in unmeasured felling of trees, without taking into consideration the consequences. "Each person exhales up to 800 g of carbon dioxide; it takes seven trees to balance that out. However, currently, there are only 0.166 trees per person, which shows how dangerous the situation is for the city," he said.

LACK OF VISION

According to IISc professor TV Ramachandra, reclamation of lakes for developmental activities has resulted in the loss of interconnectivity in Bengaluru, leading to higher instances of flooding, even during normal rainfall.

"Spaces are encroached upon with no vision at all. For instance, there are grey blocks in the city, which are areas where water is never available. The international airport was developed at a place designated as a grey block. Huge apartments have been coming up near the airport area. Has anyone given a thought to how water will be provided to the residents in these apartments? All this shows that in the next five years, Bengaluru will not be in a position to sustain its environmental resources," he said.

An abundant water supply is essential for the growth of a city. In order to monitor the water use, it is important to monitor volumes of water obtained from various sources. Bengaluru gets its fresh water mainly from Cauvery river and also through rainfall. Estimates show that about 15 to 20 per cent of water

supply is lost due to leakage in pipes. Very little work has been done to maintain them, which can account for this significant water loss, the IISc study said.

ALL WASTE ADDS UP

The environmental index is also impacted by municipal solid waste (MSW), which mostly includes domestic waste, and sometimes also commercial waste, sanitation residue, and waste from streets collected by a municipality within a given area.

Bengaluru, according to Patil, generates about 1,562 tonnes per day of municipal solid waste. "The city doesn't have proper solid waste management systems. Untreated waste gets dumped around the city, which leads to health hazards and clash between urban and rural populations. Though municipal corporations have made it mandatory, electronic waste is still not being segregated," said environmentalist AN Yellappa Reddy.

He said that while the IT city's contribution to e-waste is significant, it does not have a single common effluent plant to treat it. "E-waste today adds up to around 30-40 per cent. Toxic substances are generated from e-waste. It is the duty of the IT big guns to ensure such waste is discarded thoughtfully, but they are turning a blind eye to it," he said.

Environment experts say waste from landfills is the largest source of anthropogenic emissions. And Bengaluru's exploding landfills are no exception.

Aithal said the topmost polluting cities in India in terms of domestic waste water are Delhi, Greater Mumbai and Bengaluru, which emit 1,378.75 gigatonnes (gg), 1,058.09 gg and 759.29 gg of carbon dioxide equivalents, respectively. If these statistics are not alarming enough for drastic measures to be initiated to reverse the damage done - if that's even possible - to the city's ecosystem, then it may soon be facing unprecedented consequences.

GALLERIES

