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Bangalore neck deep in poor planning

Subhash Chandra N S, Bangalore, May 5, 2012, DHNS:

Even the gods seem to be affected by the floods and waterlogging that plagues Bangalore each time it rains heavily.

Mayor Venkatesh Murthy's remark after an inspection of the Gali Anjaneya temple flooding on May 2, was telling enough. He said the flooding would persist till the issue of the Kempambudhi lake is addressed. Indirectly, he was referring to the encroachment of the stormwater drains (SWD) connecting the lake, a malaise in the City.

Another case in point is the Ganapathi temple on Kasturba Road, in the heart of the City. A reputed corporate entity in the vicinity is alleged to have encroached upon the SWD, triggering frequent waterlogging at the temple.

Several such SWD encroachments continue to wreck havoc in the City, despite a stinging direction from the High Court to set things right. Land urbanisation and consequent loss of lakes due to encroachment has led to decrease in catchment yield, shrinkage of water storage capacity, wetland area, and depletion of ground water table, says a recent research paper published by the Energy and Wetland Research Centre (EWRC), Centre for Ecological Sciences (CES), Indian Institute of Sciences (IISc).

"With the change in use pattern, land loses the ability to absorb rainfall. Increased urbanisation has resulted in higher population densities in certain wards, which incidentally have higher land surface temperature due to anthropogenic pressure," says Dr T V Ramachandra, Senior Scientist, EWRC, the person behind the research.

The paper points out that the City's growth poles are in North, North East, South and South East of the City. This indicates an intense urbanisation process due to growth agents such as setting up of IT corridors and industrial units.

If the growth in the northern direction is attributed to the new international airport, which in turn has facilitated growth of commercial and residential hubs, the southern part is witnessing growth of new layouts. The north western part of the City along the NH 4 has small scale industries of Peenya.

Unplanned urbanisation

The researchers attributed the floods in the City to unplanned urbanisation. Using data derived from satellites, handheld GPS and remote sensing, they cited characteristics of natural catchment or drainage areas by increasing the volume and rate of surface runoff.

The report notes that the City has lost its water bodies by 79 per cent during the period from 1973 to 2009 due to intense urbanisation.

"Vegetation has decreased by 32 per cent in 1973. It decreased by 38 per cent in 1992-2002. But from 2002 to 2009, there has been a sharp decline of 62 per cent of vegetation, while the water bodies too declined drastically due to urbanisation and urban sprawl."

According to the report, 54 per cent of the lakes were encroached and illegal buildings were constructed. "Our field survey shows nearly 66 per cent of the lakes are sewage-fed, 14 per cent surrounded by slums and 72 per cent showed catchment loss," the report stated. Dr Ramachandra points out that there is now an increase in the paved surface area.

A large volume of water travels in a short duration compared to the earlier vegetation area. Vegetation, he explains, plays a significant role in preventing the floods.

"Small amounts of water goes as overflow or runoff, while the major chunk is infiltrated because of permeable roots. The roots act as microbial organisms making the soil porous due to which there is infiltration," he elaborates.

No wonder, flooding has become a common phenomenon during rains in many areas of the City such as Seshadripuram, Banashankari, HSR Layout, and City market.