

Bengaluru also prone to floods

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BENGALURU: The encroachment of Storm Water Drains (SWD) and wetlands has reached alarming proportions with most wetlands seeing rapid construction leading to a decline in natural storage capacity.

Also what is alarming is that the interconnecting and feeder channels between lakes have been destroyed, leading to flash floods during heavy rain.

The situation in Bengaluru has already reached alarming levels, say researchers. "With a lowered natural flood storage capacity, even 30 mm rainfall in 30 minutes could cause flooding, especially in low-lying areas," an Indian Institute of Science (IISc.) study said.

"When we talk of floods in Chennai and Mumbai, we get a false sense of security that being at a higher altitude, Bengaluru enjoys a natural gradient of water flow. But there is a residence time of water staying on streets before it flows out. As encroachments of SWD and marshlands increase, the residence time of water in the city also increases," said T.V. Ramachandra, senior scientist, Energy & Wetlands Research Group, IISc.

This can be clearly observed in the Bellandur-Varthur wetlands. Satellite images clearly show how encroachment has taken place over the years.

Large-scale pollution

The frothing and large-scale pollution of Bellandur lake is now attributed to rapid encroachment of feeder channels and wetlands between Bellandur and Varthur lakes. A study by IISc. has recognised parts of north Bengaluru as the most flood prone.

"Areas between IISc. and Kodigehalli, including Hebbal, Sahakarnagar and Jakkur, carry a 50 per cent flood risk every year," the study said.

Probability

While international standards prescribe that drains



With a lowered natural flood storage capacity, even 30 mm rainfall in 30 minutes could cause flooding. — FILE PHOTO

GROWING CITY

➔ Last four decades, built-up area has grown by **584 per cent**

➔ Vegetation has declined by 66 per cent and water bodies by **74 per cent**

What happened to water bodies

➔ According to A.T. Ramaswamy Committee report, 747.86 hectares of lake area has been encroached upon in Bangalore Urban district

➔ According to BDA, 2,311 families have illegally encroached on 64 lakes

STATUS OF WATER BODIES

➔ Of 207 water bodies that existed in Greater Bangalore in 1973, only 93 remained by 2011

➔ Nearly **54 per cent** of lakes were encroached for illegal buildings

14 per cent lakes are surrounded by slums

66 per cent of lakes are fed by sewage

72 per cent showed loss of catchment area

30 per cent were drained for residential sectors

FLOODS IN BENGALURU

2004: Heavy rains lashed many parts of the city; lake breach in Bommanahalli; flooding in many low-lying areas such as HAL, Indiranagar, Koramangala

2006: Puttenahalli, H.S.R. Layout, Madiwala and Agara were flooded following heavy rains

2013: Yelanahalli, Vishwa Priya Layout in Begur, Singasandra, Anugraha Layout in Kodichikkanahalli, Hulimavu, Kalena Agrahara were flooded. Sewage entered Gali Anjaneya temple on Mysuru Road

have to be built with a 10 per cent risk, the study says that drains in north Bengaluru fail during heavy rains of which there is a high probability once in two years, the study said.

A BBMP study has put the handling capacity of our Storm Water Drains (SWD) at 80 mm of rainfall in a day, but this has been reduced by more than half due to encroachments, silting and narrowing of these drains. BBMP has done little to clear encroachments.

Intention is there, no implementation

Though the Bangalore Metropolitan Regional Development Authority (BMRDA) structural plan 2031 identifies the inviolability of valleys at the regional level, it hasn't effectively stopped encroachment of these bodies. What is lacking is political will. Though

multiple reports and researchers have repeatedly recommended that all encroachments on lakes and feeder channels be removed, a legislative committee led by K.B. Kolivad is presently seized on the issue of regularisation of lake bed encroachments.

Relief material sent to Chennai

Two trucks loaded with relief material and food items will leave for Chennai on Friday. These trucks will be operated by the Federation of Karnataka Lorry Owners Association.

"We are ready to send as many trucks as required to make sure that relief material donated here reaches people stuck in Chennai. On Friday, we are sending Puri, Sagu and milk. On Saturday, we plan to send four more trucks with biscuits, milk and other items," said G.R. Shanmugappa, president of the Association.

Even Bengaluru has seen boat rescue

Chennai going under water is being blamed on rapid urban development and encroachment on wet and marshy lands, but the situation in Bengaluru is far worse. Bengaluru has in fact seen flash floods in 2004, 2006 and 2013.

Scenes of students in Chennai being rescued in boats are not entirely new to Bengaluru. Hundreds of students of PES Institute of Technology in Doddanagamangala, Electronic City were rescued in boats when the campus was flooded and water reached the first floor in August 2014. The campus abuts a wetland and the interlinking channels between the lake around the campus had been encroached upon.