

DISASTROUS DELUGE

Lake breach: More in store

Basic engineering linked to lake levels was ignored in Hulimavu, as the civic agencies indulge in blame-game. Experts warn of more lake-breach disasters if lessons are not learnt fast

Rasheed Kappan
BENGALURU, DHNS

Decades of unchecked lake encroachment have had the city's once famed green ecosystem in shambles. Unregulated pollution even sparks fire on water, inviting global attention. Last week's flash floods after the Hulimavu lake's bund breach has added a new dimension to the issue.

Hundreds of families living near the water body have had their belongings lost, their lives turned topsy-turvy in a flash. Yes, the debate has progressed to compensations and how much the government and the Bruhath Bengaluru Mahanagara Palike (BBMP) are willing to fork out.

But beyond this immediate task lies a lot of unanswered questions. Of safety, of fixing responsibilities, of technicalities and the future and condition of other water bodies across the city.

Blame game

The blame game has already started with the BBMP Mayor Goutham Kumar pointing fingers at the Bangalore Development Authority (BDA). The Authority, he claims, encroached upon the lake land a decade ago to develop a layout in Hulimavu, and sold the sites to interested buyers. The extent of the encroachment is about 17 acres and 33 guntas. The lake area is 124 acres.

On November 24, the lake's bund built on the Northern side had breached, unleashing unprecedented flooding in the nearby layout. The immediate trigger, it was later learnt, was a contractor digging up a part of the bund to let water flow into the storm water drain. But this did not go according to plan and the lake water came out in a rush, widening the breach.

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Responsibility

So, how sure is the Palike that this incident will not see a repeat in other lakes under its control? "The BBMP cannot escape responsibility. They have been in-charge for the last three years. But here, a basic rule was violated. That no one should touch a bund without the presence of the hydrogeological and hydrospatial engineers," contends Friends of Lakes convenor, V Ramprasad.

Citing the Karnataka Tank Conservation and Development Authority Act of 2014, he says any violation should be considered a crime and dealt with accordingly.

What the Act says

Here's what the Act clearly states: No person, institution, company, government departments, corporation or any local authority can "breach bund, waste weir including lowering, raising the height of the waste weir from its original height or remove fence, boundary stones or any hoarding or any sign board erected by the authority."

Has the Palike learnt lessons from the Hulimavu disaster? Ramprasad notes that the first lesson should be to go back to the engineering basics on bunds, the precautions to be taken, water pressure at the point identified for a planned breach, if at all.

Waste weirs and sluice gates are critical parts of the protocol to be followed. "BBMP should include hydrogeologists and hydrospatial engineers in its technical team. It is critical to understand and fix a lake's Full Tank Level (FTL), Maximum Water Level (MWL) and Free Board Level (FBL) before even touching the bund."

Alarming levels

So when the inflow into a lake rises to the FTL, it should raise an alarm. Before it reaches the MWL, which is about 0.45m to 0.9m above FTL, residents in the adjacent area should be on their way out. Simply put, the FBL signifies the maximum height of the bund. If the water level goes beyond this point, there is no escape.

None of the city's big lakes have clearly defined FTL, MWL or FBL. "The Vibuthipura lake, built about 1,200 years back had these markings. But now, with all the advanced technology, we don't follow this basic engineering protocol," Ramprasad notes.

But lake water levels cannot be gauged without an understanding of the inevitable inflow of sewage. Agencies responsible for the lakes make grand plans to upgrade the water bodies without giving a thought to the sewage. "If you look at any Detailed Project Report (DPR), level calculations are based on rain water inflow, but not sewage."

Sewage entry

Despite years of desilting – never known for its efficiency –, the city's storm water drain network remains clogged due to unregulated sewage inflow. Inevitably, this sewage ends up at the lakes. When this is the reality, how can consultants who draw up grand revival plans ignore lake levels enhanced by multiple layers of sewage?

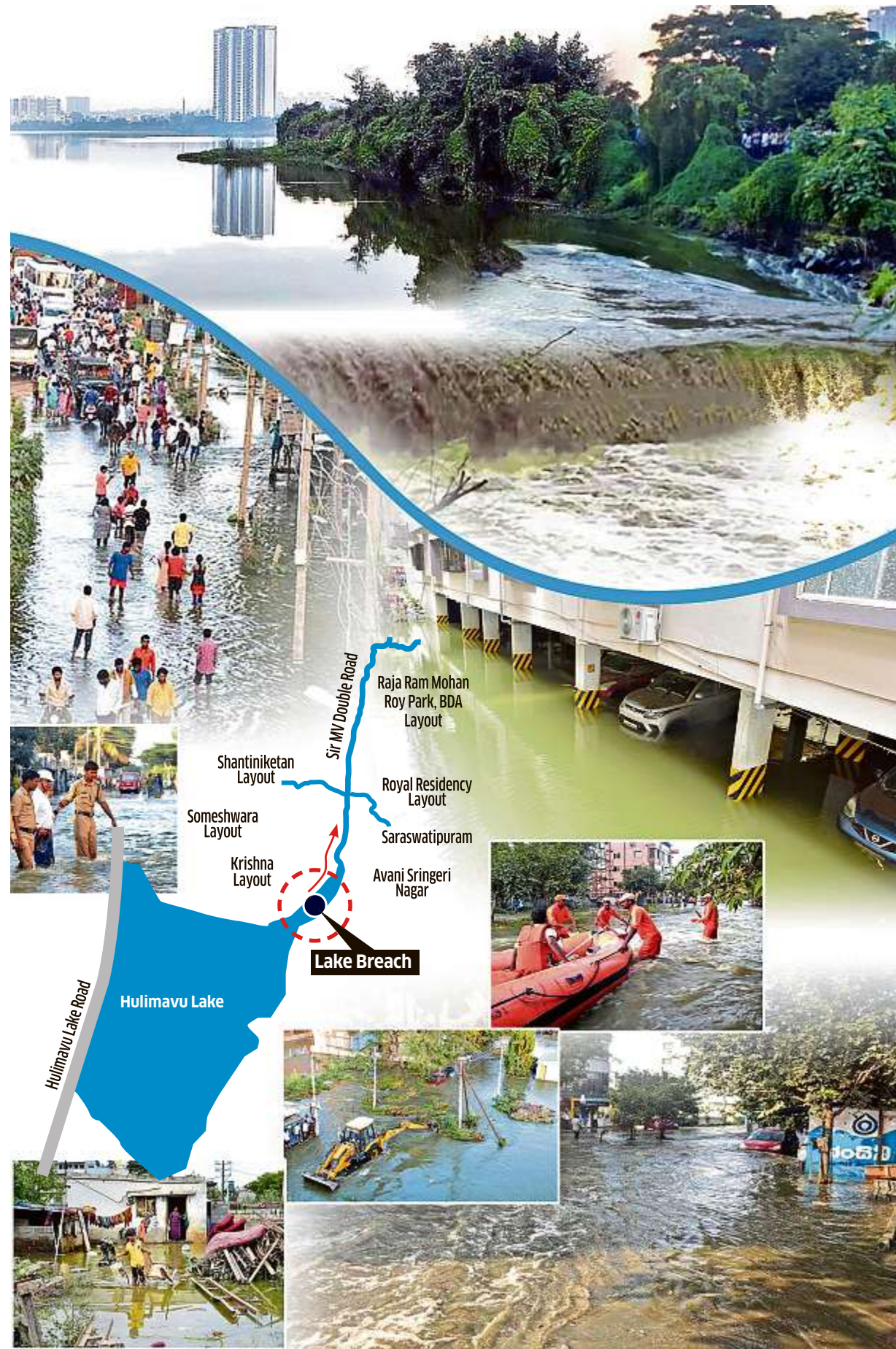
The Palike is apparently aware that Hulimavu was not the first lake to breach and will not be last. Several lakes in the past have met with a similar fate, although the repercussions were not this severe. In the last two months alone, over 1,000 families have been affected in three lake breaches.

Compensation

The hapless victims are paid only a few thousands, which they feel is thoroughly inadequate to compensate for their losses running into lakhs of rupees.

In the latest incident, the Palike's Assistant Revenue Officers (AROs) had identified 319 houses near Hulimavu lake area as worst hit. But later, the civic agency began categorising house owners based on their income, although it was a clear case of negligence.

The Palike Commissioner, BH Anil Kumar's stand was this: "As per the norms, we cannot compensate the families that have sufficient income to tolerate natural calamities. Thus Rs 50,000 compensation will be paid to those families who are poor." Earlier, the Palike had paid only Rs



10,000 each to 112 houses affected by Doddabidarakallu lake breach in October. Residents had complained that this was far too low a compensation. On an average, each house in Doddabidarakallu had suffered losses of at least Rs 50,000.

Income basis

At a recent meeting held by the Legislative House Committee for Lakes, the panel chairman Araga Jnanendra had slammed BBMP for dividing people on the basis of their income. His contention was clear: The Palike had to compensate all the houses

as the lake breach was not a natural disaster, but man-made.

The breach, as Dr T V Ramachandra from the Indian Institute of Science puts it, is a clear illustration of the lack of coordination. "People who don't know the topography, who have no engineering expertise are put in charge. The engineers have become head clerks, who only think financially. It is very sad that we have reached such a state in the land of Visvesvaraya."

(inputs by Manoj Sharma)

PEOPLESPEAK

Residents on periphery of lakes wary and anxious

Kashish Malani

The dramatic deluge after the Hulimavu lake breach has left lakhs of Bengalureans residing near lakes wary and anxious. That over 300 households could be flooded in a flash has left them with a sense of deep unease. Here are a few voices from across the city articulating that fear.

For the record, a private contractor who undertook work without any permissions or precautions has been blamed for the lake breach. Police have registered a complaint and investigations are underway. But the fear persists.

Recalling that Sunday horror, Hulimavu resident Chandrappa says: "The water rushed into my house, destroying all my electronic gadgets, clothes and necessary items. I somehow managed to rescue my kids and left them at my land owners residence and escaped." He has been promised a compensation of Rs 50,000.

Around 12.30 pm on November 24, the lake water had breached the bund and reached the roads. By 3 pm,

the water had gone deeper into the residential localities, affecting over 300 people. Many victims were sheltered in a basketball court, as other rescue and rehabilitation efforts got underway.

"We got very scared when the water started flooding our houses. It was tough for us to escape. But the authorities were quick to provide us all the basic amenities," recalls Arun, another resident of Hulimavu.

Afraid that they could be next, residents of areas adjoining the Bellandur and Varthur lakes have started taking up precautionary measures.

They are also trying to ensure that no private contractor or Bangalore Water Supply and Sewerage Board (BWSSB) is taking up any projects without permission around the lakes concerned.

Notes Bellandur resident, Elangoven, "The entire breaching of Hulimavu lake is a man-made disaster. Not having a proper technical permission, someone comes and digs up a land or a road, then disappears. People residing nearby face a lot of issues. There has to be some kind of accountability in all this."

The issue, he points out, is not about

people living near lakes. "It is about how to protect public land. Let us make sure that any work that is undertaken is



ELANGOVEN
Resident, Bellandur

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technically right."

Lake activist, Jagadish Reddy feels the disaster could have been easily avoided



MANOGNA MURARI
Architect

The news has been disheartening, in terms of errors in planning, human as well as the carelessness involved. This has caused immeasurable harm to so many houses, properties and human lives, and paints a sad picture. Planners and the concerned bodies must step up to completely avoid these incidents.



JAGADISH REDDY
Lake activist

The disaster could have been easily avoided with a little care. We had installed flood controlling mechanisms in and around Bellandur and Varthur lakes. So now, any amount of rain above 16mm can be handled within 24 hours. I suggest such gates should be installed in the entire city.

with a little care. "This issue is not only near lakes, it can happen deep inside the city too. We had installed flood con-

trolling mechanisms in and around Bellandur and Varthur lakes. So now, any amount of rain above 16mm can be handled within 24 hours. I suggest such gates should be installed in the entire city," adds Reddy.

Both Reddy and Elangoven insist that any work on lake bunds should be strictly implemented with technical expertise, after taking due precautions.

This, they feel, will avoid a situation where the lives of thousands of residents nearby are endangered. Besides, a specific authority should oversee all works done on a lake.

In the case of the Hulimavu lake, the authority responsible was BBMP. But the Palike has put the blame on the Bangalore Development Authority (BDA). The Authority had handed over the lake to BBMP in 2016.

The Palike's position is this: The BDA encroached the lake to form a layout. If they had not done so, the water would not have crossed the bund threshold. But as the buck is passed, residents are left clueless and anxious.