

Monsoon mayhem: Why does Mumbai get flooded year after year?

[India](#)

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Mumbai rains news: Every year, the city of Mumbai gets inundated with rainwater after an intense spell of showers during monsoons. What are the reasons for the Mumbai floods? We find out.



Mumbai Rains: Water-logging was reported from several areas in Mumbai when heavy rains lashed it earlier in the week | Photo Credit: PTI

Key Highlights

- Mumbai recorded heaviest rainfall in a decade on July 1 and July 2
- Experts believe that concretisation of the city is one of the main causes of Mumbai Floods
- BMC Commissioner has blamed Climate-change for water-logging in the city

Mumbai: “I was an 11-year-old when the July 2005 deluge took place in Mumbai. I remember my parents had got stuck at their respective offices while I was at home. 14 years later, the only difference that I see in the city is that now even I end up getting stuck at my office when it pours,” says 25-year-old Shruti Venkatesh, a media professional from Mulund, as the city experienced yet another heavy downpour earlier this week, bringing it to a standstill – yet again. Every year when it rains, Mumbai travels through time in the past.

The same water-logged streets. Children wade through knee-high water to get to schools. Cars and buses get stuck on roads. Local train services get disrupted as tracks get submerged in water. Water seeps into the ground floors of several houses. Precious lives are lost in the chaos. Year after year, it has been the same story.

For two days this week (July 1 and July 2), Mumbai received at least 550 mm of torrential rains, said to be the highest rainfall recorded in the city in a decade.

Much like the last year, and the year before that, the same visuals were on display in the city – massive traffic jams, trains and flights delayed/cancelled and roads inundated with stagnant water. At least 39 people were killed in rain-related incidents in the state, including 27 in the Malad wall collapse.

Also read: [Mumbai airport's main runway resumes operations, SpiceJet aircraft which overshot runway on July 2 pulled out](#)

Why is it that Mumbai, the financial capital of the country and a bustling megapolis, invariably ends up getting inundated every time it receives an intense spell of showers?

Timesnownews.com spoke to experts to explain what ails the city of Mumbai during the monsoons and what can be the possible solutions to resolve it.

The menace of concretisation

Stalin D, Director of Mumbai-based NGO Vanshakti, believes that the way things are progressing, it is evident that the problem of Mumbai floods “will never be solved” and blames it on the civic authorities’ endeavours to make it a “walled city.”

The rapid concretisation of the city, with its many roads and towers, has resulted in very little space left for water to percolate on the ground and to spread laterally and horizontally.

“They (the government and civic authorities) have called in civil engineers to defeat nature, without consulting ecologists and environmentalists. They have just gone on merely constructing everywhere,” Stalin says.

Roshni Udyavar Yehuda, environmental architect, explains that the lack of a garden or open spaces in construction projects in the city greatly contributes to the flooding during heavy rainfall. “The run-off coefficient of a concretised surface or a hard, paved surface is close to 0.9 or 1 whereas gardens and soft scapes have a run-off coefficient between 0.2 to 0.45. In other words, almost 50% of water falling on soft scapes gets absorbed into the ground while almost 100% water falling on the concrete surface runs off,” Yehuda writes on the accumulation phenomenon in her notes on 'Reasons for flooding and waterlogging in Mumbai'.

The choking of rivers

The main outlet for the rainwater to get drained out of the city to the sea is through its rivers, such as the Mithi River, the Dahisar River and the Poisar River.

However, over the years, these rivers have become choked, thanks to encroachment along its banks and the waste products and the garbage being thrown into its waters. As a result, the flow of these rivers is obstructed, preventing it from carrying the additional rainwater to the sea.

Stalin states that the main flooding in the Western Suburbs in the city is the loss of the Mithi estuary. “Let me tell you, the mouth of the estuary is being constructed upon even today. That is the place where the river empties itself into the sea. But they are constructing on it even today. So there is no place for the water to spread.”

(Rail tracks were inundated at Ghatkopar on July 2 following a heavy downpour. Pic credit: PTI)

He also notes that the construction of walls on the creeks of the salt pans has resulted in the flooding in the eastern suburbs. “The water used to disperse on the salt pans and go away because of which there would be hardly any flooding. But now there is no place, no battleground for the tidal waters and the stormwater of the cities to clash.”

The century-old stormwater drainage system

The city’s stormwater drainage system was built almost 100 years ago by the British. After the deadly July 2005 downpour, in which 1,000 people were killed, Brihanmumbai Stormwater Disposal System (BRIMSTOWAD) was initiated to overhaul Mumbai’s drainage system. However, reports suggest that the project remains unfinished, even after 14 years.

During the recent spell of showers, Mumbai's municipal chief Praveen Pardeshi had claimed that the stormwater drainage system in the city was not equipped to handle the amount of heavy rainfall received by the city, news agency *PTI* reported.

Significantly, a report by the Comptroller and Auditor General (CAG) highlighted the fact that drains in Mumbai could handle only 25 mm rainfall per hour. Additionally, the master plan for the stormwater disposal system has not even been updated in six years, the report, which was tabled in Maharashtra Assembly on July 2, stated.

Yehuda says that infrastructure and building construction in independent and individual sites often leads to disruption of the stormwater system.

"This has led to huge quantity of water suddenly appearing in places where a stormwater channel has perhaps been disrupted due to construction work," the environmental architect writes in her notes.

Is Climate-change the real culprit?

As the heavy rains lashed the city on July 1 and July 2, Brihanmumbai Municipal Corporation (BMC) Commissioner Pardeshi claimed that one of the main reasons for water-logging in several areas was Climate change.

"There is one thing -- Climate change is happening. We have never had rainfall in two days equalling a month's lot, which means more intense rainfall, this is a geographic phenomenon," Pardeshi was quoted as saying by the news agency.

However, experts disagree with the BMC Commissioner's analysis of the situation and state that even though Climate change may have caused the intensity of the rainfall to increase, the problem faced by the city were due to man-made reasons.

"The municipal commissioner should stop making tall claims like Climate change. Climate change hasn't destroyed Mumbai. Mumbai always had rains," Stalin says.

The environmentalist raised questions on the BMC's apparent lack of preparedness in dealing with the flood-like situation in the city during monsoons, despite the event recurring every year.

"In 2005, we had the worst ever rains. Ideally, we should have been prepared for 2,000 millimetres of rain. Shamelessly, the BMC, the world's richest municipal corporation, comes up with the claim that we can handle only 50 mm of rain. You cannot handle it simply because you are not ready to give nature its space," he says.

Yehuda also opines that if the BMC believes that Climate change is causing the massive flooding in Mumbai, then it should have made efforts to incorporate steps to tackle the situation in the city's Development Plan (DP).

"If they can blame Climate change, why are they not planning for it?" she asks.

Can Mumbai Floods ever be prevented?

Rainwater harvesting is one of the measures that Yehuda believes should be taken up immediately as part of a long-term solution for the city. She claimed that the government has not strictly implemented its own 2002 order that made it compulsory for new buildings in the city to be equipped with rainwater harvesting systems.

Meanwhile, according to Stalin, the government should demarcate the flood plains of Mumbai "on an urgent basis". Flood plains are low lying areas where generally no construction should be allowed as that is where the flood water gets accumulated, he explains.

"Where ever there are low lying flooding areas, they need to create escape routes for the water," Stalin says.

Even citizens can play a crucial role in ensuring that the rivers and *nullahs* – which are the main channels to drain the water out in the sea – are not choked or constricted. "Citizens can take the initiative to make sure that garbage is not thrown on the streets as they eventually end up entering the drains and choking them," Reshma Karmarkar, an architect from Goregaon, says.

She adds that the civic authority should also carry out planned infrastructure development in the city which factors in landscapes and open spaces to allow the rainwater to get absorbed in the ground.

Ultimately, says Shruti Venkatesh, the BMC shouldn't wait till the "11th hour to take corrective measures" and should make preparations for monsoons well in advance.

"They have had more than a decade to find a solution. It's high time that Mumbai is able to enjoy its monsoons without the fear of drowning," she says.