

How India 'Treats' its Sewage

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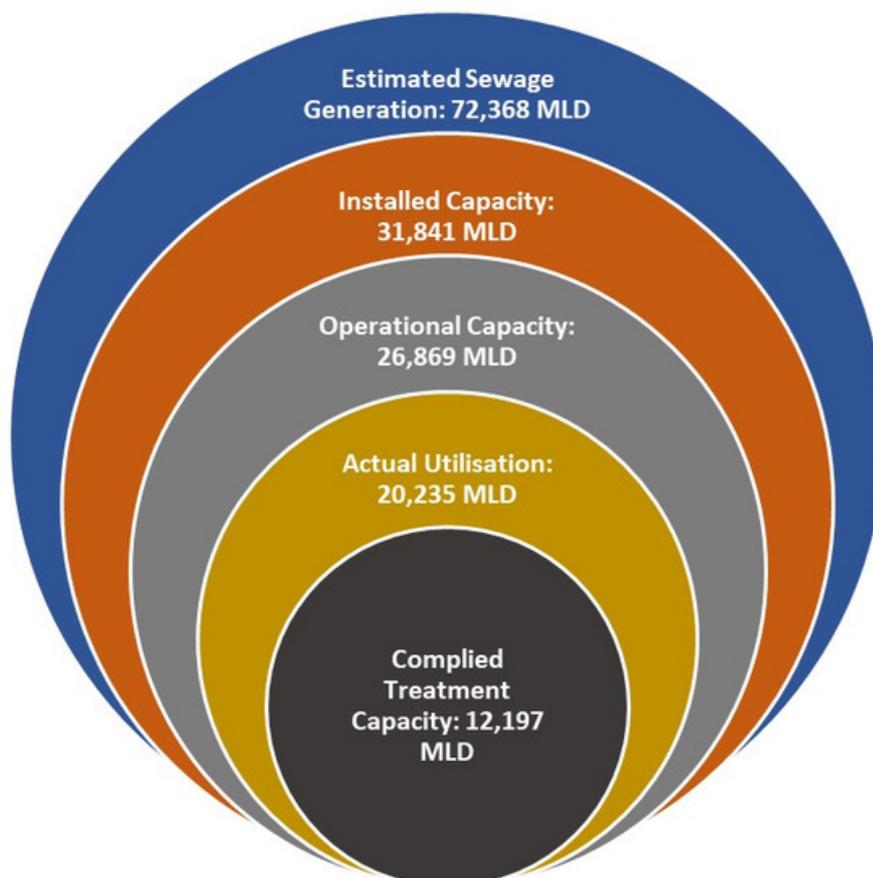
Just a few days ahead of the former US President Donald Trump's Taj Mahal visit on February 24, 2020, Uttar Pradesh Irrigation Department released 500 cusecs of water into the Yamuna in the hope to reduce the 'foul smell' around the monument that stands right on the riverbank in Agra. The Uttar Pradesh Pollution Control Board (UPPCB) cited that the move was to improve oxygen level in the river, which may not make the water fit for drinking but might reduce foul smell.

There are only a few such occasions when the state seems to be concerned or rather ashamed of the awfully high pollution levels in the rivers. Unfortunately, it hardly translates into substantial long-term interventions for cleaning the rivers or a much pragmatic approach of producing lesser waste in the first place. All we see instead is a desperate attempt to camouflage the real picture, as we saw during Trump's Agra visit and more recently during Chhath puja in Delhi when boats had to be deployed to clear the toxic foam from the Yamuna following criticism as devotees were seen taking 'holy' dip in the froth filled river.

Pollution has become a ubiquitous phenomenon in most urban rivers. It reflects the stratospheric level of waste generated by urban centres and their callous disposal into the rivers. The quantity of waste generated in the cities daily has skyrocketed to the extent that it has become practically impossible to treat all of it. In addition, as more and more hazardous waste is produced, the possibility of natural decomposition also contracts. Expert opinion seems to suggest that large-scale technology such as Sewage Treatment Plants (STPs) and

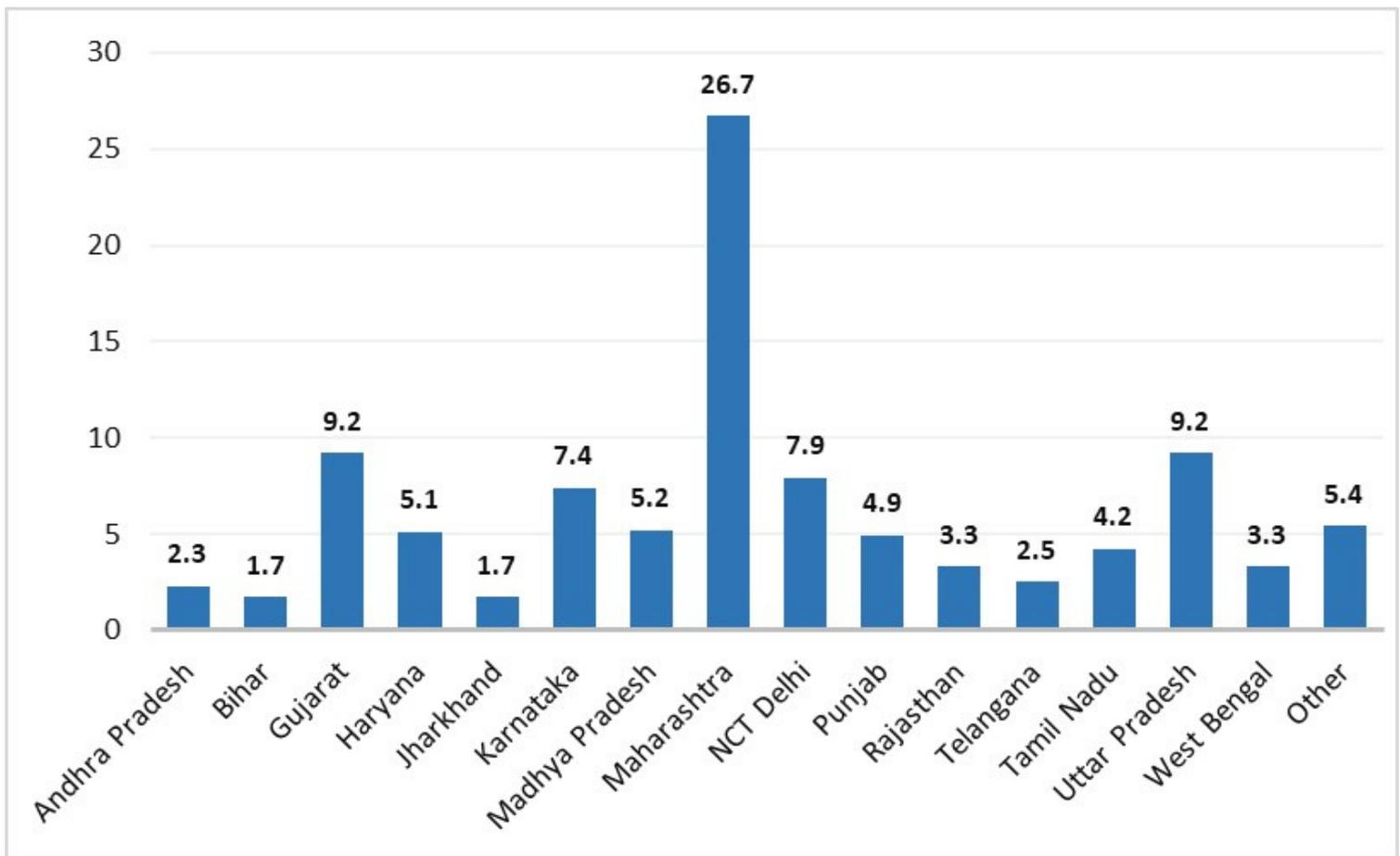
Common Effluent Treatment Plants (CETPs) is the only credible solution, but the ever-rising waste produced against their limited treatment capacity renders them ineffective.

The 'National Inventory of Sewage Treatment Plants in India- 2021' report published by the Central Pollution Control Board (CPCB) presents some alarming figures before us concerning the status of sewage produced, treatment capacity, actual treatment in all Indian states/UTs. It estimates the total sewage generated by the urban centres at 72,368 MLD (million litres per day) against 31,841 MLD of installed capacity, out of which 20,235 MLD is actually utilised (as of 30.06.2020). It means that India treats only 28 per cent of its sewage while an overwhelming majority of 72 per cent remains untreated. In addition, although the number of STPs has nearly doubled between 2014 (746) to 2020 (1,469), the treatment capacity has only increased by about 40 per cent (22, 648 MLD to 31,841 MLD) within the same period.



Sewage generation, Installed treatment capacity, Operational Capacity, Actual Utilisation and Complied Treatment Capacity (Source: CPCB, 2021)

Bigger states like Maharashtra (9,107 MLD), Uttar Pradesh (8,263 MLD), Tamil Nadu (6,421 MLD), West Bengal (5,457 MLD), Gujarat (5,013 MLD), Karnataka (4,458 MLD) and Madhya Pradesh (3,646 MLD) and Rajasthan (3,185 MLD) are together responsible for more than 60 percent of the total sewage generation. Maharashtra, Gujarat and Uttar Pradesh are also the states with the highest actual treatment capacity. However, in terms of the percentage of sewage actually treated to total generated, Chandigarh, NCT Delhi, Punjab, Haryana have performed relatively well, treating more than 70 per cent of their sewage. Chandigarh is the only State/UTs to treat more sewage than it generates, i.e. 125 per cent. The report suggests that it indicates the possibility of sewage coming from the adjoining cities, mixing of industrial wastewater into sewage or water supply from unaccounted sources.



Sewage Treatment Capacity Distribution in Percentage (Source: CPCB, 2021)

On the other extreme are states/UTs, which do not treat or treat a negligible amount of the sewage generated. While most small states/UTs like Andaman & Nicobar Islands, Lakshadweep, Manipur, Meghalaya, Arunachal Pradesh, Nagaland fall under this category, it must be noted that these are also the states which produce the least amount of sewage. However, certain larger states that produce a tremendous amount of sewage also fall under this category. Among these, Bihar (2,276 MLD), Kerala (4,242 MLD) and West Bengal (5,457 MLD) are particularly of greater concern, treating 0 per cent, 1 per cent and 4 per cent of the sewage, respectively.

In terms of treatment and reuse of domestic wastewater, some states/UTs have taken small but promising measures by using it in horticulture, irrigation, non-contact impoundments, washing (roads, vehicular, trains), construction and industrial activities. The percentage of reuse of treated sewage is maximum in Haryana (80%), followed by Puducherry (55%), Delhi (50%), Chandigarh (35%), Tamil Nadu (25%) and Madhya Pradesh (20%).

Although STPs seems to be the only resort in the current scenario, there is a limit to which they can work sustainably. Apart from a few municipal corporations of large cities, most suffer from severe financial constraints to be able to run such centralised sewage treatment mechanisms. In addition, the operational STPs are already overwhelmed even though a sizable number of households are yet to be connected to the sewer system.

Therefore, a decentralised, community-led approach that centres around the resourceful utilisation of sewage instead of its ignorant disposal is needed.

How effective are STPs and CETPs in Ahmedabad?

The High Court of Gujarat at Ahmedabad in its order dated December 3, 2021, noted that “There are, in all, 14 STPs run and managed by the Ahmedabad Municipal Corporation and 7 CETPs run and managed by the private companies. All the learned counsel appearing in this litigation in one voice made an honest confession before this Court that out of the 14 STPs, only 3 STPs are functioning to a certain extent in a reasonable manner. Out of the 7 CETPs, only 1 CETP is functioning to some extent in a reasonable manner. All other STPs and CETPs are functioning 30% of their optimal level. All the learned counsel made an honest confession before this Court that the sewage at all the STPs is treated below 30% of the optimal level and such untreated sewage is directly discharged into the Sabarmati river. Same is the case with the industrial effluent containing toxic substances like lead, mercury, chloride, etc.”

This is where agriculture provides an alternative. Agriculture has had a unique ability to add value to what is generally understood as ‘waste’. In his book *Jal Thal Mal*, journalist and writer Sopan Joshi mentions several ways in which waste has long been integrated into the practice of agriculture as a crucial input around the world. The most notable case he discusses is that of [Mudiali Fishermen Cooperative Society](#) (MFCS) in Kolkata, which skilfully treats industrial waste as it passes through several fishing ponds (*bheri*) while also providing the city with the nutritious and cheapest source of their staple diet, fish.

There are various such community-led initiatives that prepare fertiliser out of waste and use it for farming, like in Dhapa village near Mudiali. Learning from these small-scale community initiatives can create possibilities of better appropriation of waste without depending heavily on the intensive technologies and centralised waste treatment systems.

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