

## Can mechanised sweepers help Bengaluru deal with dust?

AIR POLLUTION IN BENGALURU

December 4, 2018 Arjun Rajan



A mechanized sweeper plying along Outer Ring Road; Credit- Arjun Rajan

“Even though a mechanised sweeper is being used along the arterial roads of Mahadevapura Zone, the roads accumulate dust in no time, and it feels like they have not been cleaned in the first place”, says Anu Govind, a volunteer with the citizen’s group Whitefield Rising (WR). Dust is something we see everyday, but never think about controlling it outside our homes.

**A study** done in 2010 titled *Air Quality Monitoring, Emission Inventory and Source Appropriation Study for Indian Cities*, found that road dust accounts for 20 percent and construction dust accounts for 14 percent of the particulate matter under 10 micrometer, PM-10 emission in Bengaluru. Though there are no official studies to cite, air pollution keeps affecting people in the city on a daily basis.

What are the steps that have been taken in Bengaluru so far to curb dust pollution? And how effective are they?

### **Whitefield's pilot**

The members of Whitefield Rising (WR) have in the the past few years continuously advocated the use of mechanised sweepers in Mahadevapura Zone. When they felt that there was lack of initiative from the Bruhat Bengaluru Mahanagara Palike (BBMP) officials, they decided to take matters into their own hands. **They hired a mechanised cleaner** in 2017 to clean 25 kilometers of road, and the amount required for it, Rs 50,000, was crowdsourced by WR. They were only able to cover 4.5 kilometers, in the allocated time due to the **high volume of dust and silt**.

Though the pilot was done only on one day, it proved to be useful, according to activists. "The pilot that we conducted strengthened our case for the usage of mechanised cleaners in Bengaluru", says Clement Jayakumar, a member of WR. Mahadevapura Zone has received a mechanised sweeping machine in 2018. It has been operational for over six months.

### **Implementation in other zones**

Currently the BBMP is running nine mechanised sweeping machines procured from TPS Infrastructure Limited, who are also in charge of the operations and management of the sweeping machines in the city, says P Vishwanath, Chief Executive Engineer, BBMP, Solid Waste Management. He says that the machines are currently functioning on arterial roads in all zones except in Dasarahalli.

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A mechanised sweeper at work. Pic: Arjun Rajan

The machines function late at night after 11 pm till early morning and cover a distance of 50 kilometres a day. They are fitted with GPS and cameras to track their work. The machines have a sweeping width of 3.2 metres, a dust capacity of 6 tonnes and are able to absorb various kinds of dust, mud, leaves and even small stones, says Taufeeq Khan (Operations and Maintenance Incharge, TPS Bengaluru). He adds that the tank needs to be cleared thrice daily during working hours, and is done at a temporary government designated area in each zone, which is then cleared by them on a weekly basis.

Weekly reports are provided by TPS to the zonal officers. Vishwanath mentions that the work in each zone is monitored by the Assistant Executive Engineer. A WhatsApp group has been formed for the Mahadevpura Zone to monitor the work, with Sarfaraz Khan (Joint Commissioner, BBMP, Solid Waste Management), residents of the zone, and representatives from TPS, says Clement. TPS staff regularly post pictures of the work that has been done, onto the group. Such groups have also been formed in other zones to monitor the work.

### **Managing the accumulated dust remains a problem**

Work had been temporarily halted in the Mahadevapura zone for a while in between due to delays in payment by BBMP, says Clement. He believes that the procedures in clearing the bills from junior to senior officers cause the delay.

In the Mahadevapura zone, the roads which are being cleaned of dust are Old Airport Road (HAL till Vartur Kodi); Whitefield Main Road; Kundanahalli Gate to Graphite India Junction; Outer Ring Road (till Iblur Flyover); and from Iblur Flyover to Carmelaram. Clement mentions that it takes an excess amount of time to clear all these roads with just one machine.

He points to the large number of construction projects and the high vehicular traffic as some of the reasons for the accumulation of huge amount of dust in Mahadevapura Zone. Road dust keeps rising in the air due to movement of vehicles and contributes to particulate matter measurement.

He says that as there is only one machine for the entire zone, the work done on a specific road is hardly visible, and believes that the zone would require several more machines to address dust pollution. As there is only one temporary disposal site in each zone, the machines are required to travel to far away distances, which leads to wastage of time. Clement asserts that the machines would be more efficient if there were several temporary disposal sites in each zone.

## Arresting dust pollution at source

“We have procured 17 more sweeping machines, which we believe can be operationalised in the next 2- 3 months. The other set of 17 sweeping machines, we have placed the request before the state government for approval,” said Sarfaraz Khan, while talking to *Citizen Matters*.

While more machines will allow for regular sweeping of select roads, will that adequately address the issue of dust pollution?

Nanda Kumar (CEO of Samrakshana, an Environmental Consultancy Firm and previously Chief Environmental Officer with Karnataka State Pollution Control Board) says that there is more to be done to deal with dust pollution. He believes that the root cause of increase in dust pollution must be addressed. He advocates better construction and maintenance of roads and footpaths, and measures to take private vehicles off the roads.

A recent study by IIT Kanpur titled [Comprehensive Study of Air Pollution and Green Houses Gases in Delhi](#), in addition to better construction and maintenance of roads and wall-to-wall pavement of roads, recommends plants and shrubs to be grown on open fields to prevent drifting of dust.

## Dealing with construction dust

Several citizens in conversation with *Citizen Matters* have spoken about experiencing increased dust pollution as a result of heavy construction activity. While the [Construction and Demolition \(C & D\) Waste Management Rules 2016](#) by the Ministry of Environment, Forest and Climate Change has been in force for the last two years, BBMP has not been able to enforce the existing [C & D rules](#). As a result debris generated is dumped on [streets sides, landfills, lake beds, and upcoming BDA layouts](#).

[Reports](#) point to the current lack of processing units in Bengaluru to treat construction and demolition waste. Dr T V Ramachandra (Centre of Ecological Sciences, IISC) speaks of the increase in dust pollution as a result of C&D waste being discarded on roadsides and besides highways.

The State Pollution Control Board is mandated to overlook the implementation of the rules. KSPCB chairman Lakshman states that they currently have only two vehicles to monitor if builders are following the required norms and they mostly depend on citizen's to monitor and register complaints.