



# Chance 'waste'd, crisis recycled

Despite unfriendly policies and lack of support, a handful of waste entrepreneurs have smartly shown the way to treat a small part of the City's waste. But, there is no official effort to replicate and scale up such initiatives, thanks to a powerful garbage mafia

Reeling predictably under another Himalayan garbage crisis, the City has just found one more resounding reason not to trust its civic agencies. Crushed mercilessly by a heartless, greedy garbage-transport-contract mafia, the Mandur residents are fighting back.

Mass arrests, prohibitory orders and round-the-clock police vigil haven't dulled their spirit to fight back this time. They know they can't survive in the pathetic state they are in now: Critically sickened by the unprocessed dumping into the towering landfills next door. Six more months, the BBMP seeks. Not anymore, never again, they cry in unison!

In the months and years past, talks about a hundred alternative solutions to dumping had swamped Bangaloreans. Hope had risen, perched precariously on concepts as basic as waste segregation at source, organic waste composting, and industry-scale recycling.

But as the city struggled to implement any of these, a new creed rose, away from

the mafia: Waste entrepreneurs.

These small yet highly energized men and women, focussed on micro-managing waste at an apartment here, and a company there could be the city's saviours. Yes, provided the State intervenes to swell their numbers, provide them incentives, spread their tentacles, and protect them from the greedy mafia.

## Daily Dump strategy

Daily Dump is one such waste entrepreneurial effort that emerged six years ago in Indiranagar. Despite the unfriendly policies and lack of support, TED fellow and former industrial designer, Poonam Bir Kasturi had set it up stocking a range of products that had one main objective: To encourage residents to manage waste generated in the house by themselves.

Her simple home composter - terracotta pots stacked one above the other - eventually became a hit among her 20,000 customers. "As many as 14,000 kilograms of organic waste is now kept out of the government's landfills. This is

## 4,000 tonnes

Of the 4,000 tonnes of garbage generated by the City, 1,800 goes to Mandur and 500 to Terrafirma. The rest heads to Bengipura and Lakshimpura

## 90 per cent

Ideally, 90 per cent of the waste should be treated locally and made into compost/manure. Today, this goes straight to the landfills

## 14,000 kg

Daily Dump, a small waste management firm, has managed to prevent 14,000 kg of organic waste from going to landfills daily. Can't this be replicated?

roughly the capacity of a compacter truck. This way, we are saving capital cost, fuel, labour and diseases (for people living close to the landfills)," Poonam explains.

Operating and maintaining organic waste converters (OWC) in 170 locations across the City, Vennar is another important player in the field. Its waste converters are now in operation in several big apartments, IT companies, clubs, malls, hospitals, factories and R&D organisations in the City. In the apartments, as Vennar's Narendra Babu explains, residents do the source segregation and the segregated waste is transferred to the OWC room by the housekeeping staff. "The organic

waste is eventually converted to manure, most of which is consumed by the residents themselves for various gardening activities. The remainder is sent to the farmers." The same applies to IT firms and other establishments.

## The Vennar method

The OWC converts the organic waste to homogenised odour-free output within 15 minutes through the bio-mechanical process, emerging out as compost. This is not rocket science, and as Babu asserts, the process could be replicated all across the City providing employment to thousands of people. Babu cites the case of

Hariprasad, an unemployed youth who had approached him for a job. "Through the OWC, he has now in turn employed 20 more people."

So, if garbage could be smartly managed generating employment in the bargain, why does the BBMP get it wrong year after year? Why has waste entrepreneurship remained low-key in its spread? Poonam feels people and companies should be ready to pay for the eco-friendly end products of organic and recycled waste. People should realise the huge benefits of this smart treatment of waste through a win-win method. "We want to be entrepreneurs, not NGOs," she says.

The City had to get a policy through legislation to ensure that independent apartments, SEZs, hotels, hospitals and companies generated zero organic waste. "Garden waste should never be allowed to be taken to the landfills. The City should dump only 10 per cent of waste that cannot be recycled to the landfills. Now 90 per cent is going there."

Babu squarely blames the current mess on the Palike. "It is the mother and father of the whole problem," he says. The implication is clear. The garbage mafia, the unholy nexus of politicians, officials and contractors has kept the issue on the boil.

Mandur is a clear case. It takes in about 1,800 tonnes of waste everyday, and over the years about 25 lakh tonnes have accumulated there. The land given to the garbage processor companies was to set up a waste-to-energy project. But even after 10 years, that has not materialised. Result: A once green, clean environment that helped farmers maintain a decent living disappeared, to be replaced by a stinking, disease-spewing garbage hill.

## NGOs IN WASTE MANAGEMENT

### ESG

Environment Support Group (ESG) works with a variety of environmental and social justice initiatives across India and the world. It has taken up solid waste management campaigns and has been successful in securing an High Court order, making segregation of waste at source mandatory in Bangalore

### Waste Wise Trust

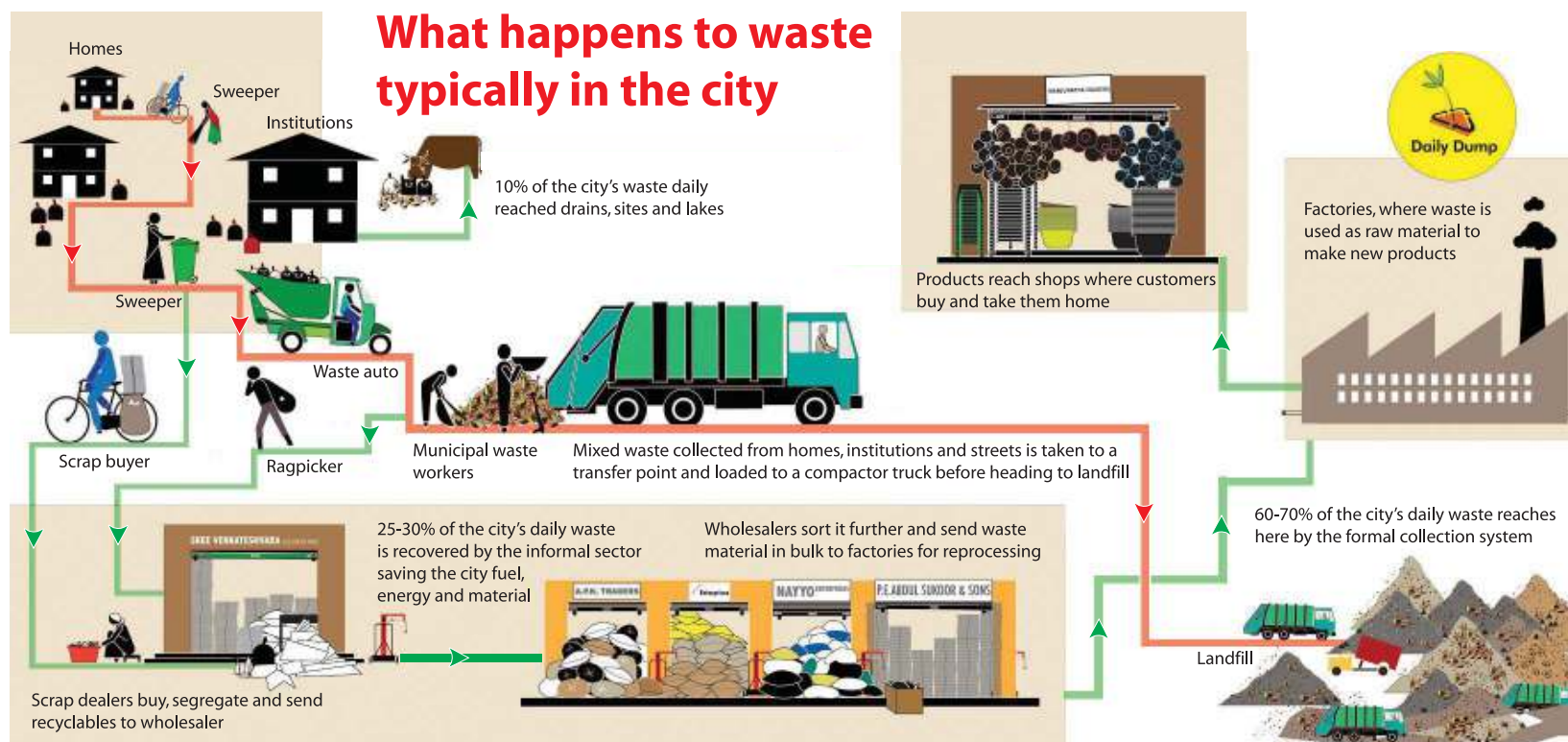
Waste Wise Trust, a non-profit organisation founded in 2003, provides solid waste management services to the corporate sector and residential communities in Bangalore. The Trust has worked with informal waste pickers and their families in the area of integral solid waste management

### Swabhimana Initiative

It was started nine years ago and has now become the nodal point for citizens to come and get help to solve their civic problems. It has regular interactions with civic agencies like BESC, BWSSB, BBMP's engineering and health departments and other agencies

### Swacha Bangalore

Swacha Bangalore, the NGO involved in door-to-door garbage collection, has contributed to the total cleanliness programme. It has organised campaigns on waste management



Nearly 25 lakh tonnes of garbage has accumulated in Mandur landfill.



Workers segregate waste. DH PHOTOS/SRIKANT SHARMA

## Wasted years

Closure of the Mavallipura landfill had triggered hope among villagers that other landfills too would be eventually shut down. When that did not happen, protests broke out in the villages. After the deadlock at Mandur sparked a severe garbage crisis in 2012, BBMP had sought one year's time from the Mandur residents to make alternative arrangements. Yet, the Palike lost the precious one year only to search for an option. The delay ensured that the garbage transporters continued to make big money.

Currently, of the 4,000 tonnes generated by the city, the lion's share goes to Mandur. Terrafirma receives about 500 tonnes a day. The remaining garbage is sent to Bengipura and Lakshimpura. Each truck could carry a load of upto four tonnes of garbage. About 1,000 trucks are engaged by BBMP and private contractors to transport and dump the garbage.

Learning no lessons from the Mandur Mavallipura landfill fiasco, the Palike tried setting up another landfill off Ramanagar between Kodiyala and Karenahalli villages. It even attempted acquiring at least 74 acres of land through a middleman under the Transferable Development Rights (TDR) scheme. This, despite the rule that TDR is applicable only within the BBMP limits and not 40 kms away.

Clearly, the intention was to retain the existing system, thereby pocketing Rs 230 crore to Rs 250 crore. A probe by the Bangalore Metropolitan Task Force (BMTF) way back in 2009 had shown that 43 contractors and many officials misappropriated at least Rs 180 crore in the name of transporting garbage. Yet, till date, no action has been taken against any of the officials. Contractors were shunted out following the High Court direction but these contractors, as reliable Palike informers inform, were replaced by their relatives!

Rasheed Kappan  
(with inputs from G Manjusainath)

## Proactive residents' welfare associations

Not depending much on BBMP, a few RWAs and active community groups in the city have taken steps to manage waste on their own in their respective localities. For instance, the Kalyan Nagar Waste Management Committee (KWMC) formed by residents have roped in 23 pourakarmikas to collect waste from 2,500 residents of the locality. While the wet waste is turned into compost through a waste processing unit set up by residents, dry waste collected is recycled and sent to private companies.

Similarly, two and half years ago, in Malleswaram, a group of ten volunteers started an initiative called "We care for Malleswaram." Explains a member of this group, Meenakshi Bharath, "Residents of various lanes have started composing the wet waste after we held these awareness programmes. Dry waste is handed over to the Dry Waste Collection Centre (DWCC) nestled in the area."

Getting proactive on the same lines are residents of Sobha Ruby apartment in Peenya Industrial Area. They have been segregating the waste much before the Palike made waste segregation at source compulsory. The collected wet waste is processed at the waste processing plant, for which the dwellers themselves had raised funds in 2011.

Prashanth G N

Niveditha Jain

## Bangalore, Mumbai, Delhi in the same waste boat

Bangalore is not alone in facing garbage disposal problems. Mumbai and Delhi too face the disposal crisis. If Bangalore can't dispose off 4,000 odd tonnes of waste generated every day, Mumbai and Delhi can't treat the 7,500 tonnes and 8,500 tonnes of waste they generate everyday. Bangalore, Mumbai and Delhi face an identical problem: acute shortage of landfills and the lack of additional physical space to create new ones and enormous risks posed by existing landfills.

Bangalore has two landfills. People living close to both have been opposing their continuation. Two landfills in Mumbai have been shut, two more are reaching saturation point and one more has not yet completely been developed. Delhi has three landfills reaching saturation point. Looking for land outside city limits has become difficult with residents in villages rightly unwilling to live with poisonous dumps around them both in Bangalore and Mumbai.

What does the immediate future of garbage generation look like? By 2020, Bangalore may generate around 7000-8000 tonnes, Mumbai around 9,000

tonnes and Delhi around 11,000 tonnes every day. If new landfills is not the answer, the only solution is a scientific-technological one that helps dispose of the waste. This would make space for the landfill to be used again. But expert caution against re-use of landfills beyond a certain point.

Two immediate solutions are available for disposal - 1. Turning waste into energy by composting techniques and 2. Recy-

### Bangalore, Mumbai, Delhi are running out of landfills

cling the waste. If these methods are implemented in a time-bound manner, waste disposal will not only be easy, you can make money too. If this is done at on mass scale, disposal is automatically taken care of.

Environmentalist Yellappa Reddy says the first step in waste disposal is separating re-cyclable and non-re-cyclable material in homes. If done, this reduces the quantum of waste taken to landfills. Estimates are that nearly 30 per cent less

waste is generated at the first stage itself. Alternatively, if separation is not done at homes, a ready team has to be deployed, says Reddy, at the landfill site to separate organic waste and inorganic waste. After segregation, the organic matter gets broken down by bacteria, after which the remaining matter can be converted into bio-gas that can be used for lighting, cooking, transportation etc. Says Reddy: "Post segregation, organic matter can be

### Segregation at source not consistent in these cities

converted into fuel. It is precisely out of the organic matter that petrol, diesel, coal and hydrocarbons originate. This organic matter should be converted into energy which will help reduce cost of fuel generation."

The organic matter is broken down into compostable material, which can then be converted into bio-gas which is nothing but energy. Compost is organic matter that has been decomposed and recycled as a fertilizer and soil amend-

ment and is a key ingredient in organic farming. Composting is simple and requires making a heap of wetted organic matter like green waste (leaves, food waste) and wait for the materials to break down into humus after a period of weeks or months. Worms and fungi further break up the material.

Compost can be rich in nutrients. The compost is beneficial for the land in many ways - soil conditioner, a fertilizer, addi-

### No political will to break mafia that control garbage

tion of vital humus or humic acids, and as a natural pesticide for soil. In ecosystems, compost is useful for erosion control, land and stream reclamation, wetland construction, and as landfill cover. Organic ingredients intended for composting can alternatively be used to generate biogas through anaerobic digestion. Anaerobic digestion is fast overtaking composting in some parts of the world (especially central Europe) as a primary means of downcycling waste organic



Residents and like-minded volunteers of every ward should take steps to process the wet waste in their wards and recycle the dry waste by roping in private companies. This way, the amount of waste going to landfills will reduce and burden on BBMP will lessen

RAJSHEKHAR D S, Secretary of KWMC



As many as 14,000 kg of organic waste is kept out of the landfills due to our efforts. This is roughly the capacity of a compacter truck. This way, we are saving capital cost, fuel, labour and diseases (for people living close to the landfills)

POONAM BIR KASTURI, Founder, Daily Dump



Our groundwater is polluted beyond redemption, our children are suffering skin and breathing problems. My uncle has been in ICU for nine days, due to complications after breathing polluted air

MALA BASAVARAJ, Resident, Mandur