

**Headline:** A collaborative solution to manage India's solid waste challenge

**Description:** Dr Vikas Goswami, Head, Good & Green, talks about how great collaboration can lead to effective solid waste management

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Deepa, a resident of south Delhi, was recently featured in the media for her zero-waste lifestyle. Since the past four years, she has been reducing and reusing what she purchases, recycling whatever she can, and composting waste to use in her kitchen garden where she grows supplies for her own kitchen. Deepa also works with others to help them understand how they can lead a zero-waste life.

### **Rising waste generation rates**

Deepa's lifestyle is still considered niche in India, but it's a concept that is much required given the amount of waste that is collectively generated each day. India alone generates 62 million tonnes of municipal waste annually, according to Ministry of Environment, Forest & Climate Change. This is expected to increase to around 165 million tonnes by 2030.

Waste generation rates across the world are also going up. The World Bank states that in 2012, cities across the world generated 1.3 billion tonnes of solid waste. By 2025, this figure is expected to touch 2.2 billion tonnes.

The World Bank has also raised alarm bells about how waste is being poorly managed in low and middle-income countries. This is a common

scenario in India as well where waste, which is usually unsegregated, is often burned in the open or dumped in landfill sites without any provisions for processing it.

This can have serious health, safety, and environmental consequences, as was witnessed in Mumbai recently when heavy smog choked the citizens for weeks together, after a spate of fires broke out at the city's largest dumping ground in Deonar in 2016. Experts said the unsystematic dumping of waste had led to the formation of combustible methane gas, which sparked off fires at the dump. The fires led to the thick, toxic smog cover, which affected local residents, and many of them even faced health issues.

### **Proper waste management is key**

Effective waste management is clearly the need of the hour, but getting it right remains a challenge. The Government's Swachh Bharat Abhiyan, which aims for 'Clean India' by 2019, has been a step in the right direction. Solid waste management is a crucial component of the ambitious mission and among its other objectives, Swachh Bharat Abhiyan wants to introduce scientific municipal solid waste management practices, enable private sector participation in the sanitation sector, and change people's attitudes to sanitation.

Since Prime Minister Narendra Modi launched the mission in 2014, over 42,000 wards across India have achieved 100 percent door-to-door waste collection, while more than 31 lakh individual toilets and 1,15,786 community and public toilets have been constructed. Over 164,000 metric tons of waste was composted in 2016 alone.

The mission has also given fillip to innovative practices in waste management such as waste-to-energy. Six waste-to-energy plants have already been commissioned across the country. Current production, as per the Swachh Bharat Abhiyan statistics, is 88.4 MW. Some of the other innovative technologies include plasma gasification, biphasic biomethanation and bio-stabilisation.

While the mission has tasted success and provided the required impetus to find solutions for India's solid waste management (SWM) woes, a lot still needs to be done.

### **Corporates collaborate to contribute**

The waste management challenge is too big for the government alone to solve and its consequences are faced by the communities. It is the need of the hour for businesses to be involved and think about how they can collaborate and contribute. On one hand, corporates implement various measures to reduce, reuse and recycle waste at their manufacturing plants. And on the other hand, they believe that waste management is related to various dimensions of the overall environment and needs greater engagement with the community. Thus, they adopt a public-private partnership (PPP) approach to handle solid waste management. One effective way to promote the cause of cleanliness is through the CSR programmes.

The Mahindra Group, for example, follows a zero-waste philosophy. Through radical resource efficiency, it ensures waste is managed at every stage in the hierarchy. The Group has also successfully implemented energy self-reliance at the Mahindra World City in Chennai. Shuttle buses and street lights at Mahindra World City are powered by CNG which is produced at a bio-CNG plant. The group is also piloting GSM-enabled, solar-powered garbage compaction bins. These not only signal for a pick up when they are full, but also optimise the route of the waste collection vehicle.

PepsiCo has collaborated with a non-profit Exnora Green Pammal to collect waste from door-to-door in five cities and segregate the waste at source. As a result, 80 per cent of the waste is recycled and only 20 percent goes to the landfill. While ACC Cement successfully tied up with a non-profit to launch an award-winning waste management and cleanliness drive for Madukkarai city in Tamil Nadu, ONGC has partnered with a local NGO to implement an ongoing solid waste management programme in Rameswaram.

Similarly, Stree Mukti Sanghatana, a non-profit organisation, has been running an urban community waste management project, which it

implemented in 2016 with Godrej as a corporate collaborator. The project involves recycling dry waste in 25 colleges in Mumbai, along with building composting pits. Godrej has also collaborated with civic bodies like Greater Hyderabad Municipal Corporation to create awareness about segregation of wet and dry waste at the household and society level.

Creating awareness about segregation of wet and dry waste at the household and society level is also crucial because under the new Solid Waste Management Rules 2016 (SWMR), community participation is mandatory, given that the onus of segregation is on the waste generator. All resident associations and commercial institutions need to segregate waste and then process biodegradable waste as well as hand over recyclable waste to authorised waste pickers. Experts say that this decentralization of waste management is critical.

SWMR also recognises the role played by India's informal waste economy such as rag pickers, waste pickers, waste dealers and kabadiwallahs. It mandates that they be integrated into the formal system by state governments, self-help groups, or any other group. This is a welcome move given that unauthorised waste workers actually complement the work of the local bodies.

Another step towards integration is providing waste workers with prerequisite skills, which will enhance their employment opportunities. Skill Council for Green Jobs (SCJG) is an initiative promoted by the Ministry of New & Renewable Energy and Confederation of Indian Industry (CII). SCJG is aligned with the National Skill Development Mission and recognises the need for capacity-building in the solid waste management sector.

This is where entities such as corporate houses and non-profit organisations, with the support of the government, play an important role. The non-profit organisation trains poor women in collection, handling, segregation and transportation of waste, compost pit management, biogas plant management and gardening. This ties in with a three-pronged strategy: ensuring employability, creating a greener India and innovating for green eco-friendly products. The aim is to

create enough potential through skilling, for people to find employment, wherever they want to.

Being equipped with the right skill-set can enhance employment opportunities for waste workers. And as India's waste generation is set to rocket, streamlining waste management to generate employment will further benefit India's economy.

Effective solid waste management isn't just the responsibility of individual stakeholders. It is a collaborative effort with integrated systems and a sense of ownership from every stakeholder.