

Why Landfills are not the ultimate solution to SWM in India

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The definition of solid waste management in India has changed over the decade, so has its objective. During the early 2000s, the objective of Solid waste management in India was to 'clean' cities of waste by simply removing it from the vicinity of public. Waste was collected from the streets, houses, markets at random intervals and dumped to any available land as per convenience giving birth to innumerable dumpyards. When such piles of waste materials get accumulated at a certain site or location where they are not meant to be, it can be referred to as dumpsites. Open dumpsites are illegal and such sites have an overall negative impact on the environment. It also affects the quality of soil and water, and poses a great risk to public health.

Few years later, landfills were considered to be the ultimate solution to solid waste management. One of the biggest challenge is the lack of understanding in differentiating between a dumpsite and landfill. What we have here in Indian cities are mostly dumpsites. Landfills are also open dumpyards but planned and engineered for safe waste disposal. In many states of India, vacant land parcels were identified by Government and used as sanitary landfill sites. Little did anyone realise the practical effects of mountains of waste heaps growing in the cities as a result of this. It is high time that the stakeholders realise the after effects of usage of prized land in our country for such disposal of waste.

Landfills are not the ultimate solution to a city's solid waste management problems as rightly pointed out and practised in developed countries. In almost every city that has landfills, they have become environmental and health hazards. Improper ways of identification of sites and unorganised disposal in open areas and landfills result in the spread of communicable diseases and affect the welfare, livelihood and economic productivity of the local population. It also diminishes the value of the surrounding real estate. Further, the leachates contaminate the soil,

polluting the groundwater if suitable exclusion criteria is not applied in this aspect. Another utmost important issue is to understand the impact of Methane gas on surrounding environment. It is a well known fact that as a result of decomposition of organic masses in landfills, Methane gas is released, which has the tendency to self-ignite at temperatures above 60-70 degrees Celsius, thereby accelerating fire in landfills. When Oxygen in the air comes in contact with Methane gas released by decomposing solid waste, it results in a combustible reaction, causing fire.

Another issue with landfill over a period of time is that the HDPE lining which is usually provided in engineered landfills with leachate collection system form a source of groundwater contamination due to inadequate design, construction and maintenance, resulting in the leakage of leachate. All these accounts to the fact that using landfills as a primary method of municipal waste disposal is outdated and alternative forms of waste management need to be adopted. Waste is a complex material and hence its management is different in different states. One technology suitable for a particular state may not work for another state in the same country. Many alternative technologies are identified and practiced in the developed countries such as WtE plants, Anerobic digestion, composting and incineration. It requires correct identification and study of waste characterization to proceed with the right technology.

Unless every household segregates their waste into dry waste, organic waste and sanitary waste, no amount of technology or operational efficiencies can make a difference. Making everyone segregate is a slow process and requires consistent and continued efforts. Most of the knowledge about waste in India is with workers in the informal sector. Therefore it makes sense from a sustainability point-of-view to design any system to manage waste with the informal sector workers at the heart of it.



In India, many ULBs and Gram Panchayats are having multiple projects envisaged under different SBM projects at some stage. Bringing all such projects under one umbrella shall throw some light on the real requirements of each state. Having multiple consultation with all such stakeholders plays a major role in identifying the issues to be addressed and paving a way forward. Fund allocation for SWM activities is not an issue, utilisation of these funds in right manner is.. Its high time that related SWM frameworks are updated considering the importance of 100% segregation at source .