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Solutions for Solid Waste Management in India

28th July 2017
4:00 – 6:00 PM
B-32 Tara Crescent, Qutub Institutional Area
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Development Alternatives

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As the Indian economy expands and material consumption rises, a major challenge at hand is the management and containment of solid waste. Annually, 62 million tonnes of garbage is generated by the 377 million people living in urban India (Report of the task force on Waste to Energy, Planning Commission, 2014). However, it is not just the amount of waste generated that is an issue; even worse is the fact that more than 45 million tonnes, or 3 million trucks worth, of this garbage is untreated and disposed by municipal authorities every day - most of it in an unhygienic manner leading to health issues and environmental degradation. Specific targets under the Sustainable Development Agenda also highlight proper waste management as an important pillar for development. Goal 12 precisely focuses on sustainable consumption and production patterns to promote philosophies like 'Reduce, Reuse, Recycle', 'Zero Waste' and Circular Economy.

20 million people currently make a living from picking up waste from dumps (Waste Aid, 2015), implying proper waste management can be a source of countless economic opportunities across the entire value chain, by generating employment and providing opportunities to recover secondary materials for reusing and refurbishing.

Similar positive benefits may also be derived for the environment by curtailing waste dumping related pollution of land, air and water. Nearly 75% of the waste generated in India is not treated (Annual Report, CPCB, 2013) and openly dumped onto fallow lands, leaching lethal chemicals into the ground, toxic fumes into the air and poison into the water systems. The critical impact on public health is immeasurable and can be witnessed as a rapid rise in pulmonary diseases, cancer occurrences, birth deformities etc. World Health Organisation estimates that a better waste management system would ensure prevention of 22 types of diseases (Mallapur, 2014).

The major generators of solid waste are the big cities- Delhi, Mumbai, Bengaluru, Chennai and Kolkata, dumping anywhere from six to ten thousand tonnes of waste per day (Compendium of Environmental Statistics, India 2015). The disposed waste has varied environmental, social and economic impacts.

To maximise benefits along the waste value chain, the Solid Waste Management Guidelines 2016 have detailed the most appropriate steps to improve the waste management paradigm in the Indian context and minimise environmental impact of the same. Minimum generation of waste by reusing and recycling, in tandem with proper segregation and treatment practices is the most preferred approach to tackle the challenge this sector poses. 50-60% of waste generated in typical Indian cities is organic and biodegradable, concluding that composting would help the country tackle a large volume of its garbage that is disposed off, sparing the ample amount resources used up for its transportation and disposal. .
Similar ingenious approaches have been promoted across the world for reducing resource consumption and increasing resource recovery from waste materials. The Korean government has promoted the "SSSR Campaign" (Ahnabada Campaign), which stands for "Save, Share, Swap, and

Reuse," to bring the reuse of goods into everyday habits, and has hosted marketplaces for exchanging or trading second-hand goods.

Another approach, the pragmatic 'Zero Waste' philosophy promotes absolute recycling and reuse of all products, restricting the amount of dumped waste to near zero. It emphasises on designing and managing products and processes to reduce the volume and toxicity of waste and materials, conserving and recovering all resources, and not burning or burying them. Implementing Zero Waste would ideally eliminate all discharges to land, water, or air that may be a threat to planetary, human, animal or plant health. The philosophy ultimately focuses on eliminating waste.

The Indian government has dedicated resources and technical capabilities to improve the waste situation in the country. The Waste Management Rules have been issued separately for different categories of waste, vis-à-vis, plastic, municipal, electronic, construction and demolition, hazardous and biomedical. The Municipal Solid Waste Rules primarily aim to achieve 100% collection and segregation of waste to ensure efficient treatment and disposal. In line with the mandate of the rules as identified, some successful initiatives being steered in the country are:

- **Biomethanation plant at Bittan Market, Bhopal, Madhya Pradesh** collects kitchen waste from hotels and restaurants within a 2km to produce 300 cubic meters of biogas per day. The resultant gas is then fed into a genset to light up the market area in the evening.
- **Tirunelveli**, a small city in the state of Tamil Nadu has been announced as the first to have achieved 100% source segregation of municipal solid waste. The organic biodegradable waste is collected by the municipality on a daily basis while plastic waste is collected only once a week on Wednesdays.
- **HasiruDala** in Bengaluru strives to integrate marginalised informal waste workers including waste pickers in the solid waste management framework by utilising their expertise in the domain. Their work includes collection, sorting, grading and transportation of waste for recycling which is foundational to both green and circular economies, much needed for mitigation of climate change. HarisuDala members provide service to more than 13000 households in Bengaluru.

Conversion of waste to energy via incineration is not widely accepted in India owing to its commonly known negative environmental impacts, though it is a widely practiced method globally. With this ***trialogue 2047,*** we aim to explore answers to the following question:

- What should be the principles for Solid Waste Management in India?

- What are the most suitable models for qualitatively improving the waste management system in India on the criteria of clean technology, environment sustainability, economic viability and consumer behaviour?

- How can we enhance the capacities of different stakeholders - the government, private players, civil society, communities and individuals – to strengthen their potential role in solving the solid waste problem of the India?