“EFFICIENT WASTE MANAGEMENT”

THEME LEAD

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INTRODUCTION

With the increasing population, the management of Municipal Solid Waste (MSW) in the country has emerged as a severe problem not only because of the environmental and aesthetic concerns, but also because of the sheer quantities generated every day. According to the Central Pollution Control Board (CPCB), 27,486 TPD (Tonnes per day) of MSW was generated in India during 2011–12, with an average waste generation of 0.11 kg/capita/day. Of the total waste generated, approximately 89,334 TPD (70 per cent) of MSW was collected and of that only 15,881 TPD (12.45 per cent) was processed or treated (*Annual Report*, CPCB 2013). Segregation at source, collection, transportation, treatment, and scientific disposal of waste were largely insufficient leading to degradation of environment and poor quality of life. Based on current MSW generation estimates and current waste management practices, the estimated greenhouse gas (GHG) emissions from the solid waste sector would be around 1,142.5 Gg/year.

KEY QUESTIONS

- Can corporate sector ensure that they work with local governments in cities in which they operate to ensure that at least 50 per cent of organic waste generated is either composted or treated in biogas units?
- Can corporate sector look at smart manufacturing to reduce undesired packaging?
- Can private sector provide technology option for more efficient resource recovery (e.g., precious/semi-precious metals extraction) from e-waste?

In addition to the MSW, waste streams like e-waste, packaging waste, and construction and demolition debris are also making life of urban local bodies difficult as they have the mandate to manage them. The e-waste is of particular concern as it is not only one of the fastest growing waste streams, but also its improper management is introducing different hazardous/toxic chemicals in ecosystem. As per the statistics of the CPCB, total national generation of e-waste is around 8 lakh tonnes per annum out of which, only around 2 lakh tonnes per annum are treated by authorized recycling facilities. Packaging waste comprises a wide range of materials that are derived from multiple items used as packaging material. Presently, packaging material waste is being managed along with MSW. Packaging material can be broadly classified as food and non-food packaging materials. Non-food packaging makes up almost 80–90 per cent of packaging by weight and its quantity is rising day by day. Some amount of recyclable packaging waste—such as paper, plastic, glass, metal, and cartons—is not picked up, because

it is soiled substantially, or is directly buried under a huge pile of waste, in the bin or at the disposal site. Quite often, rag pickers focus their search and recovery on a few varieties of recyclables that have good returns. Other materials are discarded. Hence, much potentially recyclable waste from streets and bins ends up at the disposal site, along with other domestic waste and street sweepings. Rag pickers, who search disposal sites as well as streets, nevertheless recover some of those materials; however, most of the packaging waste gets buried.

SUPPORT FROM EXISTING GOVERNMENT AND CORPORATE INITIATIVES

Introduction of waste reduction measures is the first desired step but most neglected in the 3Rs (Reduce, Recycle, and Reuse). It is necessary to be able to decouple the waste generation process from the growth of economy and population. Various ways in which this can be achieved for reducing packaging waste and e-waste are as follows:

- Alternative packaging, i.e., use of fabric or jute packaging instead of traditionally used polythene bags which are difficult to collect and recycle
- Lesser packaging without sacrificing product quality
- Designing products for disassembly so that majority of their components can be recycled at the end-of-life
- Utilization of waste packaging as fuel in cement kilns
- Recycling of e-waste to recover useful precious and semi-precious metals.

India reportedly salvages and recycles around 60 per cent of MSW, though most of it is collected and recycled by informal sector using rudimentary technologies. It is reported that in developing countries around 15–20 million people are engaged in waste recycling activities—in some cities 2 per cent of the population. More than 1 million people are engaged in waste recycling activities in India. It is also reported that informal sector (waste pickers) removes around 10–15 per cent of waste every day from city streets and is key to solid waste management system in any city. There is, therefore need for skill enhancement, modernization of recycling technologies, and institutionalization of informal sector.

The organic waste (around 50 per cent of total municipal waste with high moisture content) can be composted and compost can be co-marketed by fertilizer companies to ensure its effective utilization and support composting facilities financially.

KEY CHALLENGES

- Reducing undesired consumption of resources
- Source segregation of waste to ensure efficient dry waste recycling

- Cost recovery for waste management services
- Skill development in formal and informal sector
- Market for compost and recycled products
- Development of regional recycling infrastructure, e.g., regional recycling parks
- There is huge cost of inaction which we do not realize.