

Waste Management: From Sustainability to Scalability

December 3, 2021

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Dr. Sharma is a seasoned infrastructure professional with more than 25 years of experience. He has handled multiple aspects in infrastructure domain, including business development, design, implementation, and operations of prestigious projects. The nature of projects involves BOT, Annuity, HAM, EPC, DPRs, Feasibility, CSC, AE, etc. He has previously served the United Nations in Africa and Afghanistan. In addition to working on multiple projects in various parts of India, he has exposure to Infrastructure business in Middle East and European Countries. He is Masters of Technology from BITS-Pilani and BE (Civil) from the University of Mysore. He has done MBA (Marketing) from NIMS, and also holds a Doctorate (Management & Operations) from Y. S. University Delaware (USA). In REPL, he spearheads many large-scale infrastructure projects including the Smart Cities.

India by virtue of its large population is one of the biggest waste producers in the world. GoI is striving to make the country as waste-free as possible. However, despite the efforts of the government, India's waste problem is constantly increasing. Most Indian cities are struggling with their municipal waste and gradually choking under their garbage. In many places, rudimentary methods of waste disposal are being followed. This not only affects the lives of citizens by polluting land, water and air but also hurts the image of the country at global level.

Sustainable waste management is need of the hour for the country. It not only helps in controlling the damage to the environment but also in reversing the damage that has already been done. It helps create more space, save money and conserve the planet for the future generation. In some cases, sustainable waste management also helps make money.

Sustainable Waste Management

When most people think about waste management, some think about handling the leftover material after a product is used. However, sustainable waste management starts much before the product is actually consumed. It starts right at the beginning of the product's lifecycle. Sustainable waste management takes the approach of minimizing the impact of a product on natural resources throughout its lifecycle. Therefore, optimizing the resources is the first stage.

In a fast-moving society, where products are easily and cheaply available, the majority of people use and throw away most products. A lot of organizations are focusing on making single-use products. These products offer convenience, safety and hygiene; however, the single-use behavior is perhaps the most significant cause of avoidable waste production. Sustainable waste management encourages individuals to keep reusing products for as long as possible. Reuse is the most important and effective way of reducing waste production.

The next step in sustainable waste management is recycling. Products like glass, plastic, rubber, paper, electronic goods, plastic cases, batteries etc can be converted into new and useful material and objects at the end of their original life-cycle. Sometimes such material can be restored to its original form, while at other times it can be turned into new products. Recycling helps to keep the materials in use as much as possible and delay their entry into the waste stream.

No matter how much 'reduce, reuse and recycle' policy is followed, some waste will always be produced. Handling and managing this waste is also very critical. Sustainable waste management calls for a mechanism by which this ultimate waste does not find its way into waterbodies or landfills. Creating manure from waste or generating energy from the waste are the most preferred options for the final disposal of waste, however, not everything can be treated in this way. Incineration is the final step in waste disposal in waste management.

Countries like Sweden have done tremendous work in sustainable waste management. Less than 1 percent of the household waste in the country goes to the landfill and the majority of it is used to produce energy. According to the reports from the Swedish Environmental Protection Agency, Sweden is now importing waste from other countries and efficiently managing it.

Problems with Indian waste

Waste from Indian households majorly consists of organic material and therefore is low in calorific value. This makes it unsuitable for energy generation in conventional waste-to-energy plants. Waste-to-energy plants need to be customized as per the requirements of Indian household waste. The household waste from Indian homes is more suitable for compost.

Initiatives by the Government of India

GoI has continuously been working towards making the country garbage free. The Swachh Bharat Abhiyaan, Swachhta Sarvekshan and the Swachhta helpline are some of its major initiatives for sustainable waste management in the country. The government is running various awareness programs to encourage the segregation of waste at the source. At places like Gautam Budh Nagar, U.P., the waste collectors have been instructed not to collect mixed waste from the households. This compels residents to segregate waste into wet and dry before handing it over to the waste collectors.

Several waste-to-energy plants have come up in the country to make use of waste to generate electricity. The Ghazipur waste-to-energy plant in New Delhi is one of the most recent examples.

Economic opportunities from Waste management

Now a days, waste is an opportunity to build solutions that are economically viable and scalable. The use of technology and modern day science are making roads for a lot of start-ups and established organizations to venture into waste management space. The innovators are working hard to develop products from waste and winning accolades globally.

How can citizens contribute?

Citizens have an important role to play in waste management. Avoiding using single-use products, reusing products for as long as possible and segregating waste at source are some of the ways citizens can contribute to it. Using organic waste to create compost and separately disposing of recyclable waste like electronic waste, paper and batteries could be other significant contributions towards sustainable waste management. Citizens should be inclined towards buying products which are produced by sustainable means. This will pressurize corporations to invest in sustainable production methods.

Conclusion

The world is sitting on a mountain of garbage. This mountain is gradually becoming taller and taller. Traditional means of waste management do more harm than good to the environment and human life. For a country like India where the huge population is already exerting tremendous pressure on the resources, sustainable waste management to reduce environmental impact is desperately needed. While the Government is doing its bit, the contribution of other stakeholders like citizens and corporates is extremely low. Contribution of every stakeholder is extremely important for the successfully implement of sustainable waste management.