

## Modelling Affordable Waste Management Solutions for India

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**Abstract :** Rapid and unplanned urbanisation in most cities of India has progressively increased the problem of managing municipal waste in the past few years. With insufficient infrastructure and funds, Municipalities in most cities are struggling to cope with the pace of waste generated. Open dumping is widely in practice as a cheaper option. Scientific disposal of waste in such a large scale with the elements of segregation, recycling, landfill, and incineration involves sophisticated and expensive plants. In an effort to finding affordable and simple solutions to address this burning issue of waste disposal, a semi-mechanized plant has been designed underlying the concept of a zero waste community. The fabrication work of the waste management unit is carried out by local skills from locally available materials. A resident colony in the city of Guwahati has been chosen, which is seen as a typical representative of most cities in India in terms of size and key issues surrounding waste management. Scientific management and disposal of waste on site is carried out on the principle of reduce, reuse and recycle from segregation to composting. It is a local community participatory model, which involves all stakeholders in the process namely rag pickers, residents, municipality and local industry. Studies were conducted to testify the plant as revenue earning self-sustaining model in the long term. Current working efficiency of plant for segregation was found to be 1kg per minute. Identifying bottlenecks in the success of the model, data on efficiency of the plant, economics of its fabrication were part of the study. Similar satellite waste management plants could potentially be a solution to supplement the waste management system of municipalities of similar sized cities in India or South East Asia with similar issues surrounding waste disposal.

**Keywords :** affordable, rag pickers, recycle, reduce, reuse, segregation, zero waste

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