

## Swachh Bharat's waste management problem

To anyone tuned into Davos last month, Indian leaders presented an impressive picture of a country open for business. “If you want wealth with wellness, come to India”, was the message. For those closer to the ground, however, the quality of life in India's towns and cities seems distinctly suspect.

Here is one important aspect of this: India generates over 150,000 tonnes of municipal solid waste (MSW) per day, with Mumbai being the world's fifth most wasteful city. Yet, only 83% of waste is collected and less than 30% is treated. According to the World Bank, India's daily waste generation will reach 377,000 tonnes by 2025. Blame urbanization and industrialization, but the consequences of India's megacities producing tonnes of waste are tangible and troubling.

India's waste predicament presents numerous social and environmental challenges for urban local bodies (ULBs), whose prerogative covers MSW management. Most noticeably, urban waste has significant effects on our health. There is then the invisible plight of the thousands of informal ragpickers who sustain their livelihoods by collecting, sorting, and trading waste. By some estimates, ragpickers save almost 14% of the municipal budget annually. We have also failed our duty as trustees of natural wealth. Take, for instance, the apocalyptic scenes at the Ghazipur landfill site in Delhi, where waste burning is a major contributor to the air pollution crisis.

A noteworthy first step from the Narendra Modi government was propelling sanitation to the top of the policy agenda under the flagship Swachh Bharat Abhiyan programme. The Clean India Dashboard tracks programme achievements, 24x7. Out of 82,607 wards, 51,734 now have 100% door-to-door waste collection, up from 33,278 in November 2015. Almost 88.4 megawatts (MW) of energy is generated from waste-to-energy (WTE) projects. Nevertheless, the disproportionate focus of the programme on toilet construction and eliminating open defecation deflects attention from colossal failures in waste management systems.

For policy prescriptions, we should look East rather than West for a change. South Korea has one of the world's most sophisticated waste management systems, and has been hugely successful in decoupling the link between economic growth and waste generation. Its small size notwithstanding—a country of 51 million people, generating around 53,000 tonnes of MSW per day—it has a daily per capita MSW generation that is two to five times larger than that of India. Despite rapid industrialization over the past half century, it is the only Organisation for Economic Co-operation and Development country that has reduced MSW by 40% while its nominal GDP (gross domestic product) has seen a five-fold increase.

Indeed, the unique economic and social development trajectories of individual countries mandate different approaches to waste management. Until the 1980s, Korea, like most other developing countries, focused on improving efficiency of waste management through incineration and landfills. This was considered relatively easier than public campaigns to “Reduce and Recycle”. However, by the late 1980s, in the face of accelerating waste generation, South Korea implemented a volume-based waste fee system—a paradigm shift focused on controlling waste generation and achieving maximum rates of recycling while raising additional resources to finance waste management.

It has since seen a drastic reduction in MSW generation: from 30.6 million MT in 1990 to 19.3 million MT in 2016. It is now the country with the second-highest recycling rate in the world (60%) after Germany. It is one of the few countries to separate and recycle food waste. Meanwhile, landfill and incineration rates have decreased dramatically from 94% in 1990 to 38% in 2016.

“Reduce and Recycle”, however, has not been the only focus of the government. Landfill recovery projects such as the Nanjido recovery project carried out by the Seoul metropolitan government in 1999, have successfully transformed hazardous waste sites into sustainable ecological attractions. Today, the Nanjido site welcomes 10 million visitors a year, and saves about \$600,000 a year by providing landfill gas to be used as boiler fuel. Other municipalities are following suit: the world’s largest landfill, Sudokwon landfill in Incheon, is currently being converted into “Dream Park”, a leisure and environmental education centre.

A complementary policy focus has been to harness energy from WTE plants. South Korea released “Measures For Waste Resource And Biomass Energy” in 2008, which provided budgetary and technical support to local governments to expand WTE facilities. The world’s first landfill-powered hydrogen plant was built in South Korea in 2011, and currently over 60% of new and renewable energy is produced from waste—a contrast to India where wind and solar constitute major renewable energy sources.

A comprehensive yet creative policy mix for effective waste management in South Korea would not have been possible without political will and strong public demand for cleaner, healthier living environments. As India’s own economy grows faster and further, the country will face an insurmountable waste crisis, unless the government puts a high priority on waste management. We must demand our right to live in a clean and healthy natural environment.

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