Achieving Zero Waste: Focus on waste segregation at source

Delhi, with a population exceeding 20 million, generates over 11,000 tonnes of waste daily. This substantial volume significantly impacts the Yamuna River and contributes to the towering landfills at Okhla, Ghazipur, and Bhalswa, which highlight the city's escalating waste management challenges. These landfills pose risks to public health, contribute to greenhouse gas (GHG) emissions, and affect the quality of life, particularly for vulnerable communities. Furthermore, unmanaged waste exacerbates issues like urban flooding by clogging natural drainage systems, increasing the city's vulnerability to disasters.

Promoting waste segregation at the source is a key step toward addressing this crisis. This practice reduces the need for secondary segregation, which often requires significant investments in capital, energy, and land. Effective source segregation also facilitates lower waste generation and supports the transition to a circular economy, where materials are reused and recycled efficiently.

Additionally, source segregation aligns with India's global sustainability commitments. It supports Sustainable Development Goal (SDG) 12: Responsible Consumption and Production, and SDG 11: Sustainable Cities and Communities, while contributing to SDG 14: Life Below Water by reducing water pollution. By adopting this approach, Delhi can enhance urban resilience and work toward creating a cleaner, healthier, and more sustainable environment for both current and future generations.

Current Status of Waste Segregation at Source:

Solid waste of 11,104 MTPD is collected and transported to three landfill sites and processing plants. Approximately 47% of the total generated waste is processed through Waste to Energy and Waste to Compost plants and rest is dumped in 3 Sanitary Landfill Sites (SLFs). Out of this, NDMC areas witnessed 100% waste segregation and Cantonment areas 90%. Only 12 wards out of the 250 falling under Municipal Corporation of Delhi's jurisdiction are witnessing 100% segregation of municipal waste at source. At least 70 municipal wards in MCD are still segregating less than 40% waste at source.

Policy intervention by the state:

1. Environment (Protection) Act, 1986
2. Solid Waste Management Rules, 2016
3. Plastic Waste Management Rules, 2016 and Extended Producer Responsibility
4. Construction and Demolition Waste Management Rules, 2016
5. Hazardous and other wastes (Management and Transboundary Movement) Rules, 2016
6. Bio-Medical Waste Management Rules, 2016
7. E-Waste Management Rules, 2022
8. Battery Waste Management Rules, 2022

9. Single Use Plastic ban
10. Swachh Bharat Mission
11. Mission LiFE
12. Meri LiFE, Mera Swachh Shehar campaign of NDMC
13. RFID system and GPS tracking of waste collecting vehicles
14. Waste to Energy Plants and Waste to Compost plants
15. Remediation of legacy landfill sites
16. Initiatives by Municipal authorities of Delhi- 591 colonies under Delhi's Zero Waste initiative, new software programme launched for bulk waste generators, MCD 311 app, NDMC 311 app, QR code based plastic waste collection service

Call for Innovation:

Waste segregation at source is still a challenging issue despite concerted efforts by the multiple authorities. This necessitates a multi-pronged approach involving all stakeholders to achieve the goal of 100% waste segregation at source and consequently, circular economy:-

a) Ways to minimize waste generation to achieve SDG 12: Sustainable consumption and production.
b) Building capacity and willingness of the people to segregate waste at source.
c) Overcoming the financial and technological constraints faced by Municipal authorities in segregation of waste at source and its management.
d) Changes that can be introduced in the existing legal framework to ensure its effective implementation.
e) Challenges faced by citizens in keeping Delhi clean, such as shortage of garbage bins or toilets.
f) Good practices in the country or outside that Delhi can utilize to enhance its waste segregation and management capacity.

Problem statement:

What technological innovations, awareness initiatives, infrastructural investments and policy interventions can be introduced to aid the existing measures to ensure waste segregation at source in the areas with low waste segregation at source?

Additional Resources:

1. Niti Aayog- Link
2. UNEP- Link
3. Municipal Corporation of Delhi: Link
4. Wellfound: Link
5. Indore Municipality: Link