Financial Constraints to Address Open Waste Burning in Bangladesh

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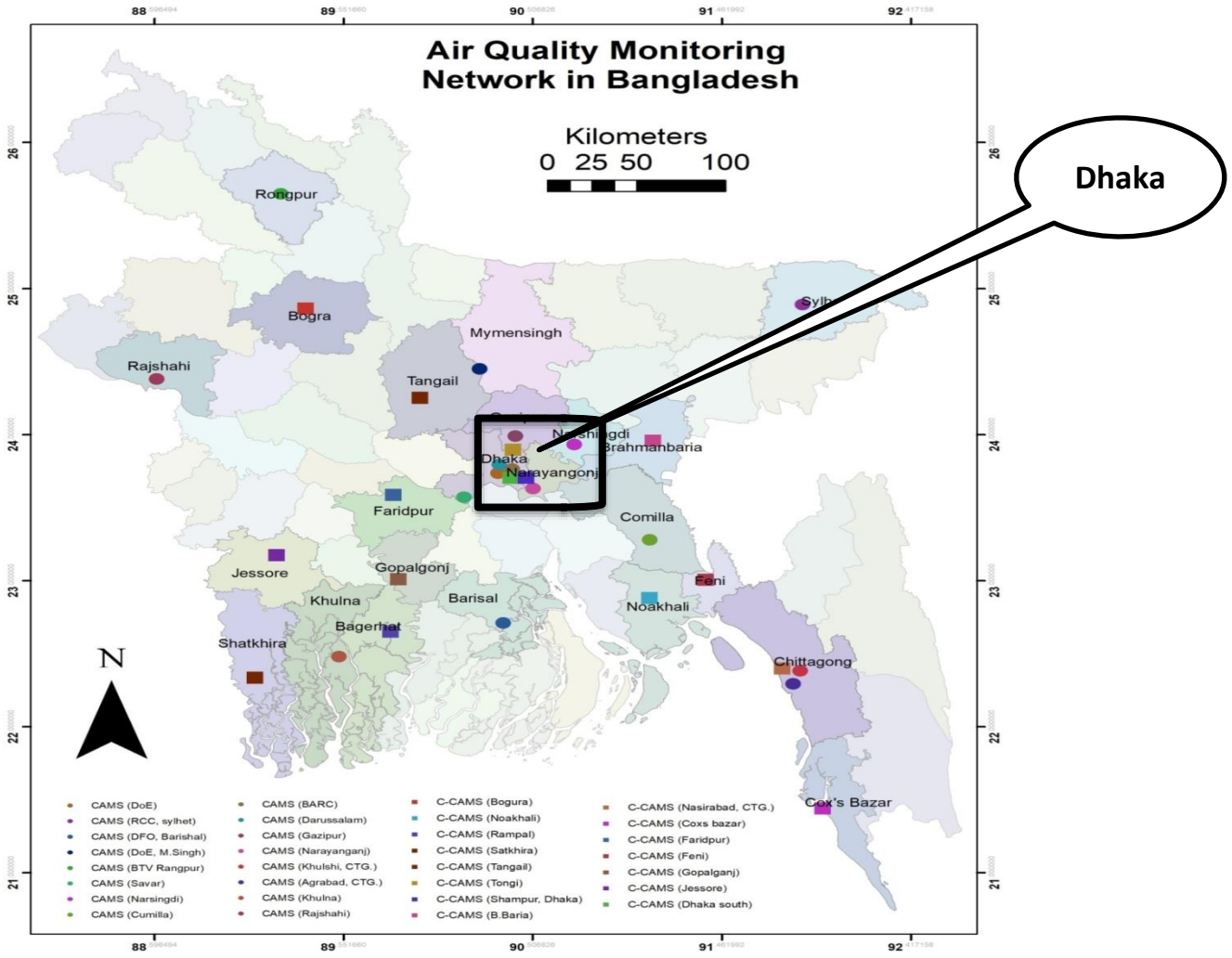
Bangladesh

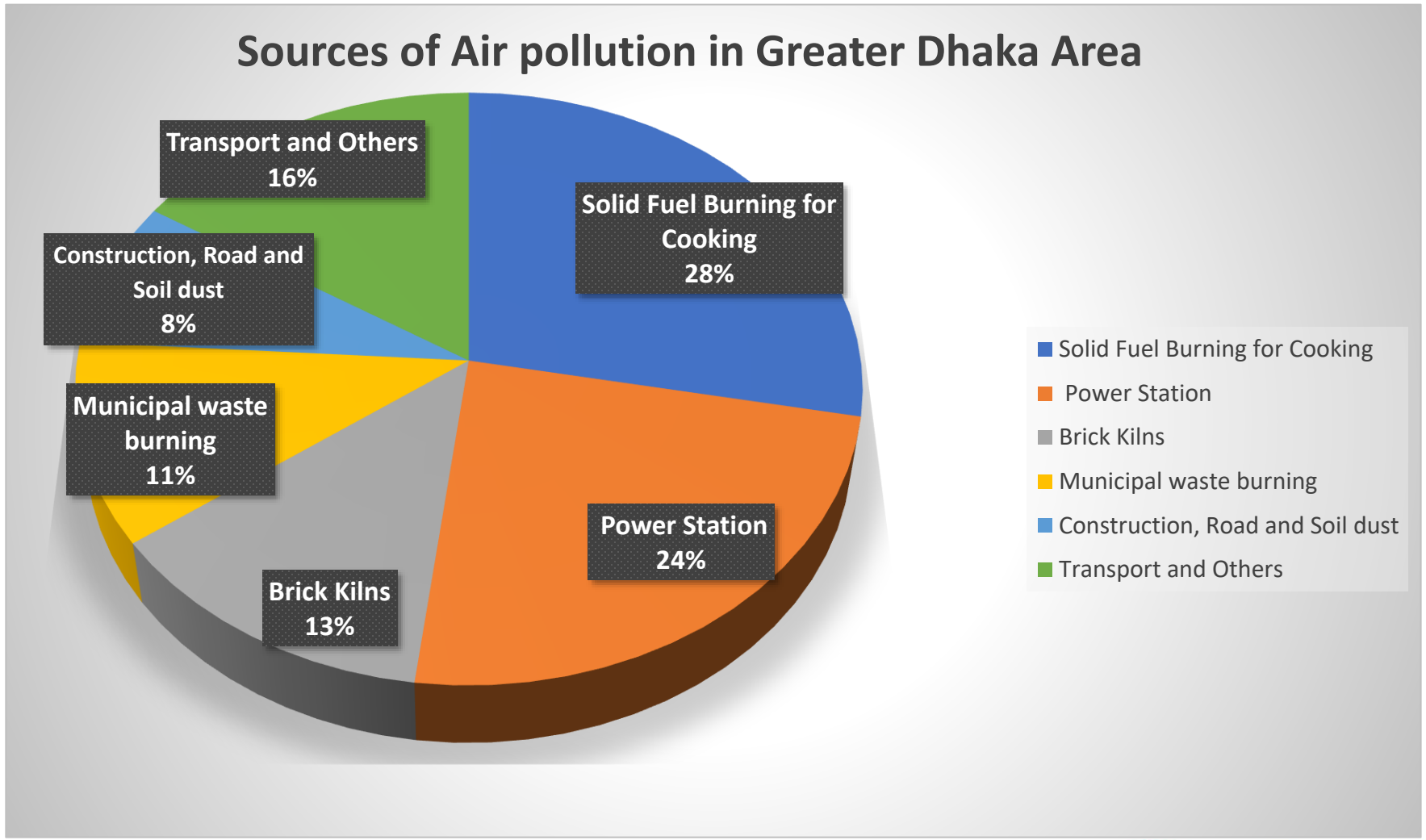
Air Pollution Scenario of Bangladesh

- Bangladesh is among the most air-polluted countries in the world.
- Annual PM2.5 levels: 90–100 µg/m³ in Greater Dhaka; 60–100 µg/m³ in other areas.
- Air pollution is the 2nd most significant health risk factor in Bangladesh.
- ~159,000 premature deaths due to air pollution.
- 250 million working days lost in a single year.
- Average life expectancy reduced by ~5.5 years.
- Economic loss equivalent to ~8.3% of GDP.

Existing Air Quality Monitoring Network (31 Stations) In Bangladesh (PM2.5, PM10, SOx, NOx, O3 and CO Including Weather Parameters



Air pollution sources in Greater Dhaka Area

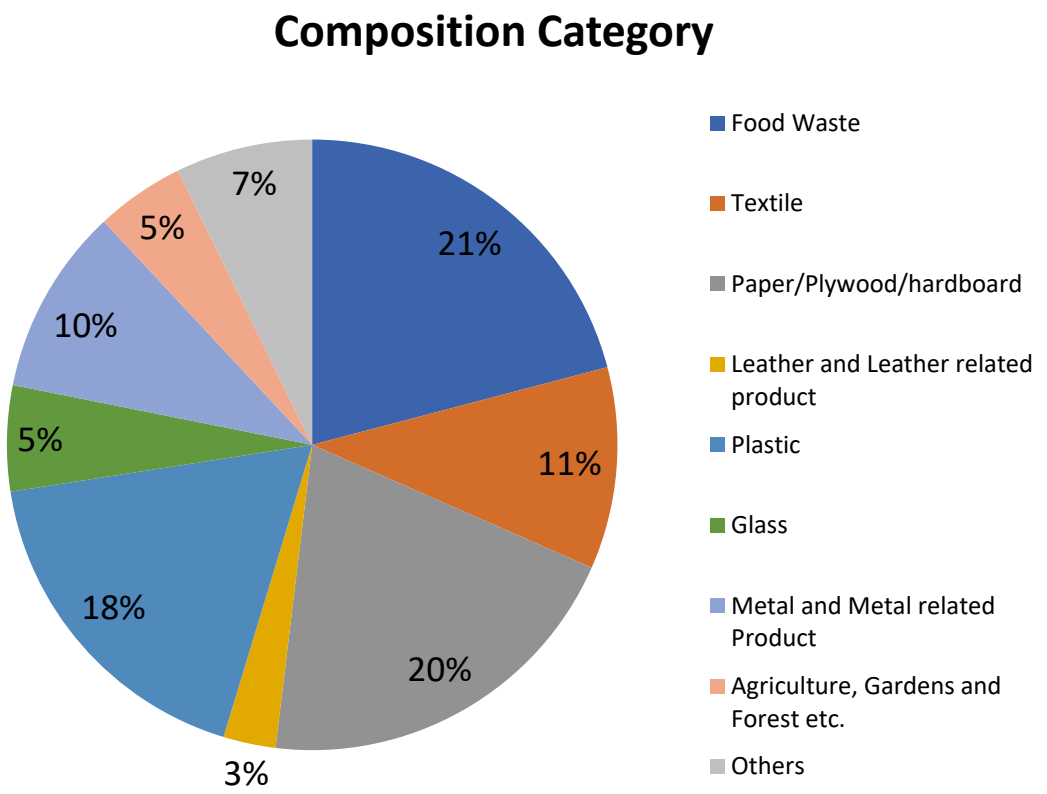


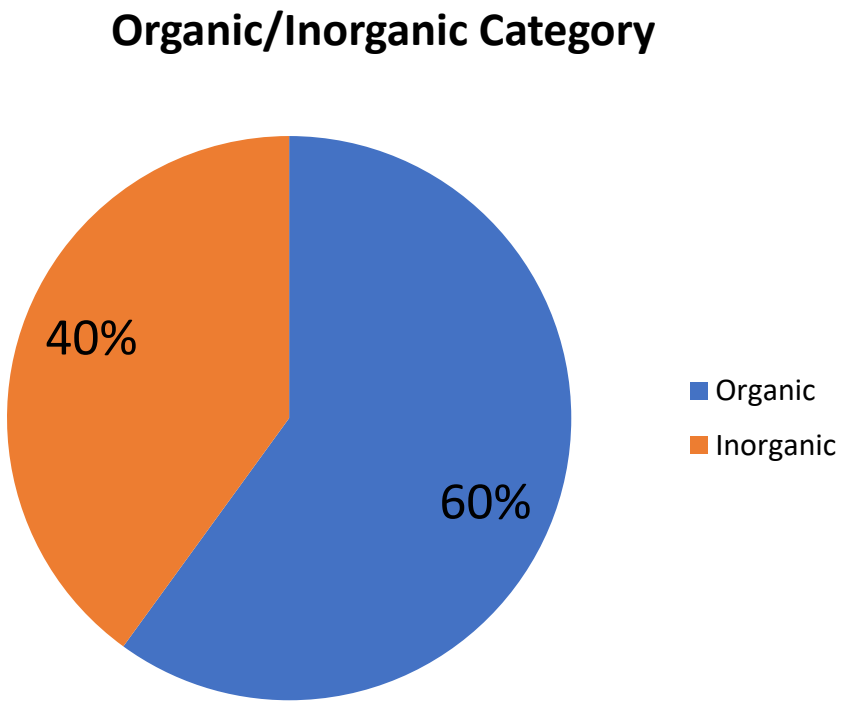
World Bank study 2023

Municipality Information

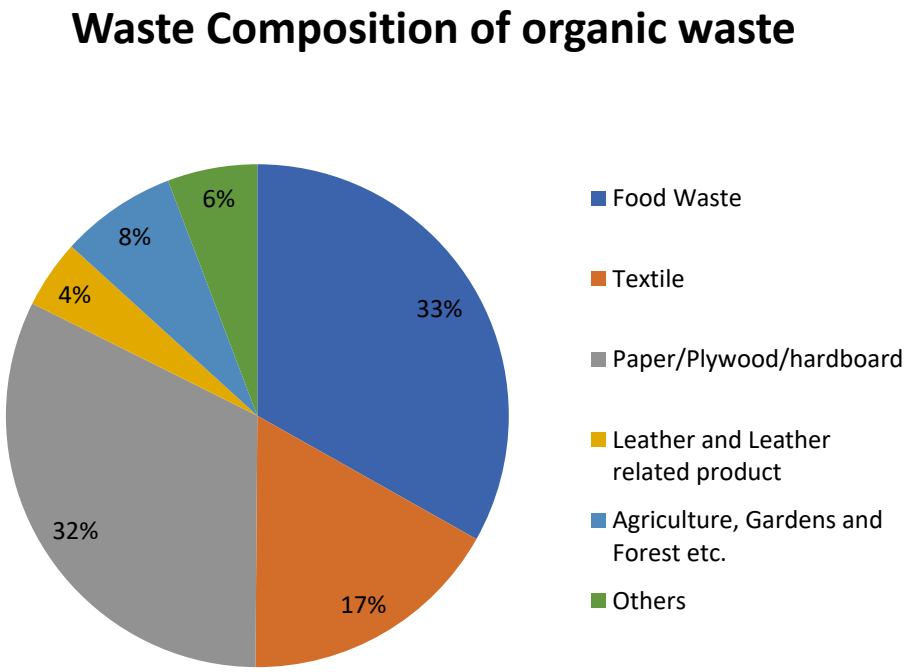
- Total municipality 342
- Urban Population 40%
- Population per sq. km. 5936 (City area 14322)
- Municipality Budget as a percentage of GDP -0.86 %
- Budget per capita 6017 BDT (~ 50 USD)
- Budget of waste management 7.92%
- Waste management budget per capita 558 BDT (~ 4.5 USD)

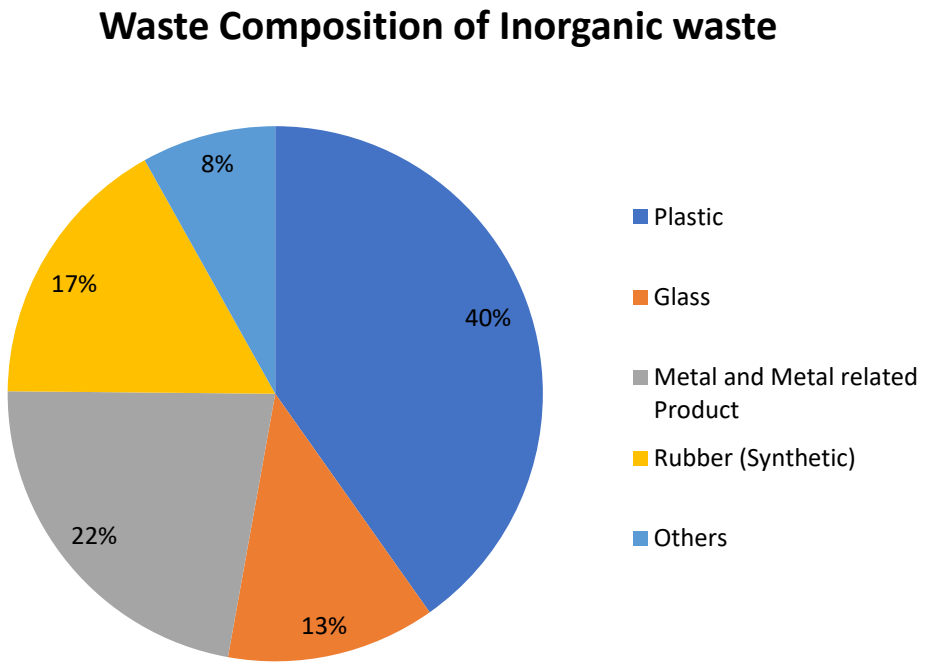
Categories of Solid Waste





Organic and Inorganic Waste Composition

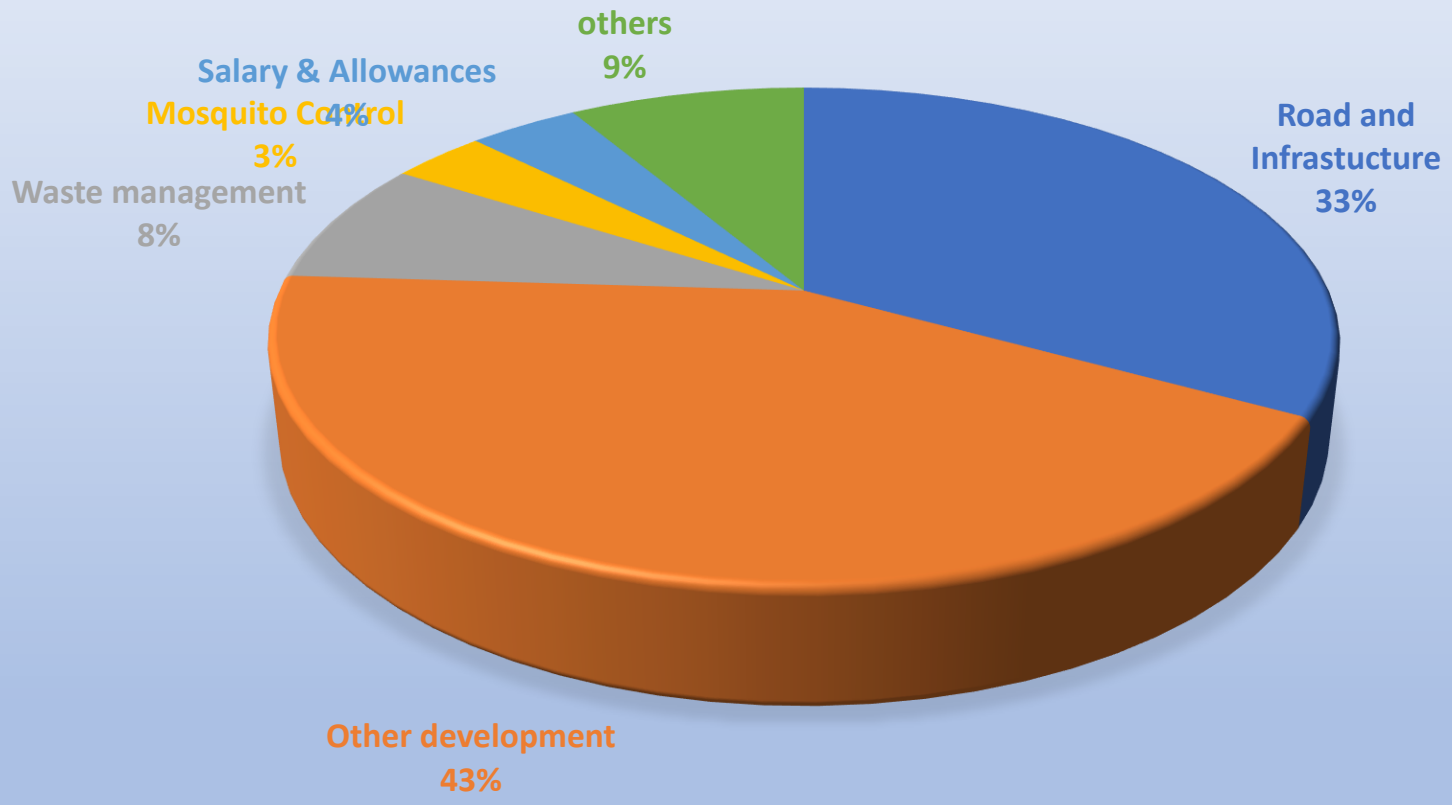




Waste Production in Municipality Area

- Waste generation per capita 0.5 kg.
- Collection rate 79. 22 %
- Waste category: 19.46% food , 18.92% paper & cardboard , 16.62%plastic
- Total waste dumping station 494
- Sanitary landfill 12 only
- Total generation of solid waste 7.5 Million tons
- Compost plant 12

Dhaka North City Corporation Budget Allocation



Key Policies and Legal Framework

- The Constitution of the People's Republic of Bangladesh
- National Environmental Policy (2018) and Environment Conservation Act (1995, amended 2010)
- Medical Waste (Management and Processing) Rules, 2008
- National 3R (Reduce, Reuse, Recycle) Strategy, 2010
- Hazardous Waste and Ship Breaking Waste Management Rules, 2011
- E-Waste Management Rules, 2021
- Solid Waste Management Rules, 2021
- Air Pollution (Control) Rules, 2022

Infrastructure and service gapes

- Insufficient Scientific Sanitary Landfill and no modern incinerators
- Low Collection coverage and Transport
- Lack of fund in Local government Institutions (LGI) to expand or improve services
- lack of Formal Processing and Recycling
- Insufficient land
- limited public awareness

Revenue Constraints at Local Government Institutions

- Low own-source revenues and limited fiscal autonomy
- Solid waste user fees rarely cost-reflective; exemptions are broad
- Cash-based accounting obscures lifecycle costs and unfunded liabilities
- Intergovernmental transfers are unpredictable and not performance-linked
- Weak creditworthiness blocks access to commercial finance

Donor Dependence & Projectization

- Capital-heavy assets funded by development partners without secured O&M
- Fragmented pilots increase unit costs and strain supervision capacity
- Short project cycles misalign with landfill lifecycle and closure obligations
- Post-project sustainability plans and escrow provisions are weak

Informal Sector Economics

- Informal waste workers deliver de facto recycling services without /very low payment
- Price volatility in recyclables undermines stable Materials recovery facility (MRF) revenues
- Lack of formal contracts limits traceability for EPR and Environmental, Social, and Governance (ESG) finance
- Social protection and occupational safety and health (OSH) gaps increase overall system risk and costs

Environmental & Climate Finance Linkages

- Methane mitigation potential from organics and landfills not monetized
- Limited readiness to access carbon markets or results-based climate finance
- Green bonds and sustainability-linked loans
- EPR for packaging and e-waste can unlock private co-finance if rules are clear
- Blended finance can de-risk recovery, composting, and WtE where viable

Strategies need to Waste Management

- Extended Producer Responsibility (EPR).
- Increased government & donor support (JICA, World Bank, ADB, AIIB).
- Public–Private Partnerships (PPP) & Waste-to-Energy ventures.
- Green financing & credit guarantees.
- Community-based and market-driven solutions.
- Results-based financing and incentives.
- Implementing user fees/tariffs
- Composting, recycling initiatives to generate revenue
- Digital monitoring to reduce leakage
- Capacity building in financial planning

Dhaka North City Waste-to-Energy (WtE) project

- Capacity 3,000 tons of municipal solid waste (MSW) per day
- It is the first and largest project in Bangladesh and South Asia
- Installation of four 750 tons/day incineration lines, two 35 MW turbo-generator systems
- Investment of about US$ 500 millions
- operation period 25-years


Thank
you